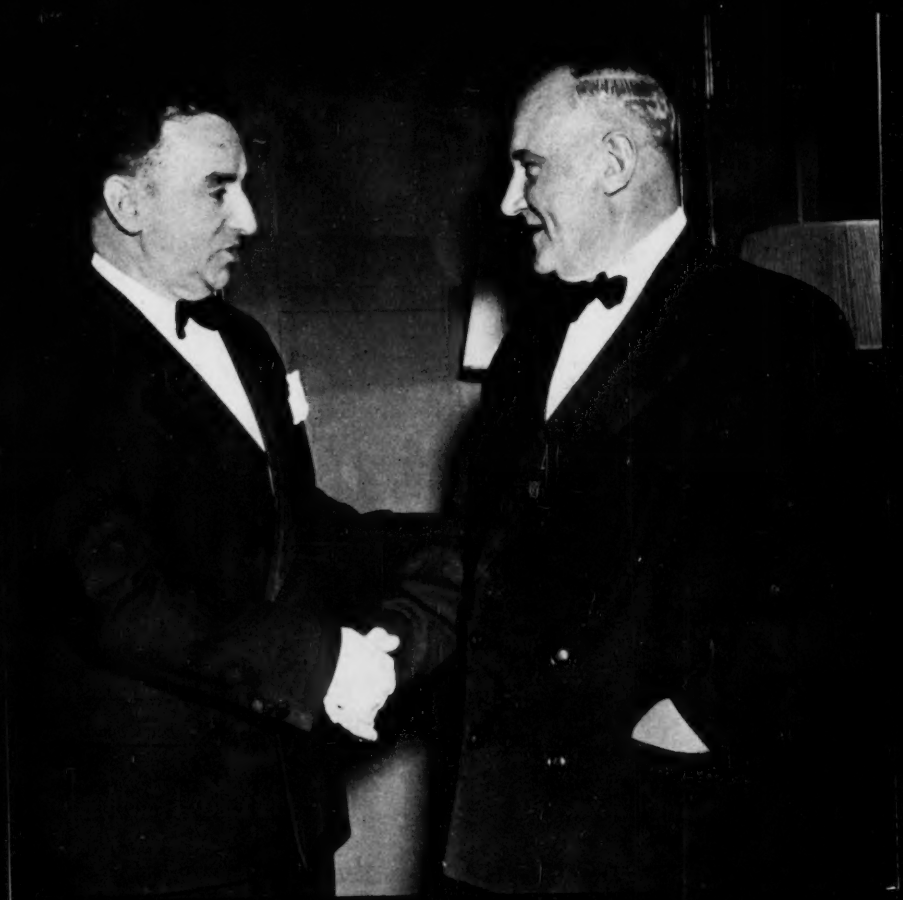
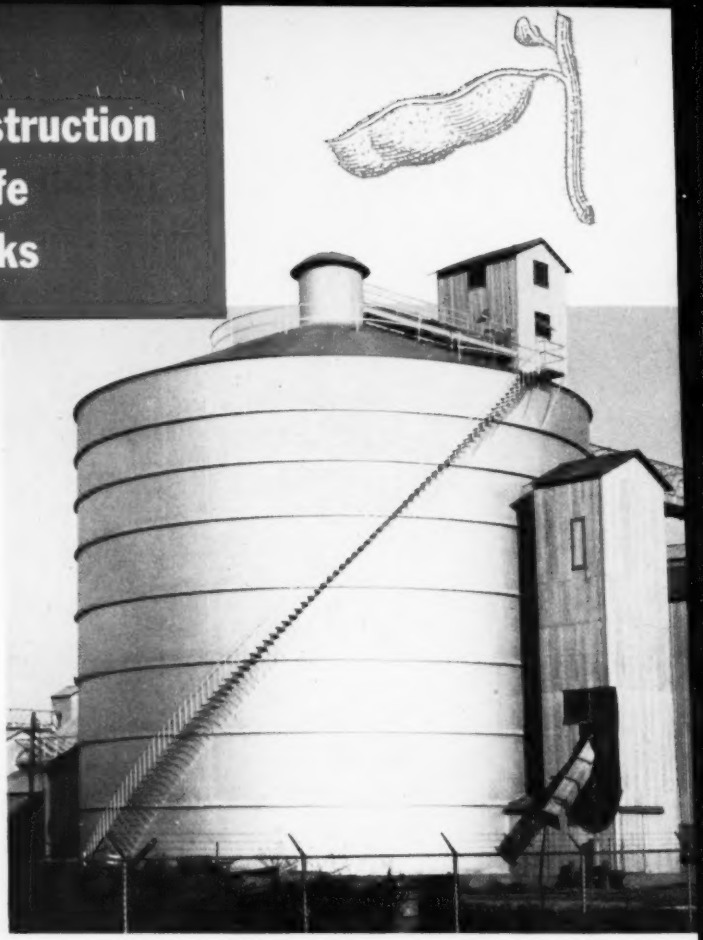
ENGINEERING NEWS-RECORD



A McGRAW-HILL PUBLICATION

HORTON
Welded Steel Construction Assures Longer Life For Soy Bean Tanks



The shining new Horton soy bean tank at the Refuge Cotton Oil Mill in Greenville, Mississippi is built for many years of dependable service. Horton engineering and erection methods, combined with welded steel construction, are always an assurance of maximum tank life.

This 70 ft. diam. by 60 ft. cylindrical structure provides safe and clean storage for soy beans. Welded steel tanks won't crack or leak and smooth tank surfaces mean easier painting. The result—lower maintenance costs.

Specially constructed Horton welded steel tanks, such as the one illustrated above, are performing valuable services for Industry throughout the world. They have been thoroughly proven in many types of service for both liquid and dry material storage.

When you consider new tank construction, write our nearest office for information or quotations. There is no obligation on your part.

PARTIAL LIST OF HORTON WELDED STEEL EQUIPMENT

Elevated tanks	Cookers
Flat-bottom tanks	Hemispheroids
Pressure tanks	Hortonspheres
Sulphate digesters	Hortonspheroids
Sulphite digesters	Barking Drums
Marx Savealls	Steel Smokestacks

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BUILT FOR ROUGH GOING

3 TS-300 MOTOR SCRAPERS IN TOUGH RUBBERY CLAY

AVERAGE LOADING TIME . 32 SECONDS
LOADING DISTANCE . . . . 40 FEET
EJECTION TIME . . . . 12 SECONDS

LOOK at this record . . . exceptional even for LaPlant-Choate Motor Scrapers! Production like this in tough, rubbery clay! It shows what big, powerful TS-300's *can* do in the toughest jobs. It proves that LPC Motor Scrapers have *everything* a real earthmover needs for rough going . . . power, speed, capacity, stamina, many other advantages combined for high production and low earthmoving cost.

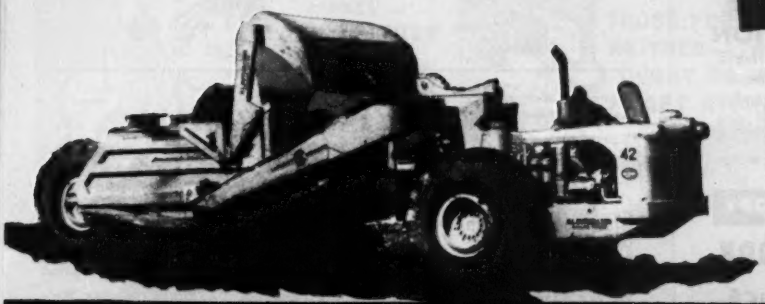
When your rig is built for the tough jobs, you can be sure it will deliver on all types of material, under all conditions.

EXTRA LARGE FRONT APRON OPENING

Fast, clean ejection of this tough, rubbery material demands the 8'9" apron opening found only on TS-300 Motor Scrapers.

When you need equipment that's built to beat the roughest conditions, call on your LaPlant-Choate distributor first.

Ask GLENN BUTLER about LaPLANT-CHOATE MOTOR SCRAPER PERFORMANCE



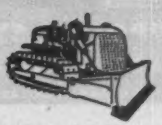
H. L. Butler & Son of Dallas is an outfit that's moved lots of dirt . . . made money on tough ones like this White Rock Sewage Plant job for the City of Dallas. They know what good equipment means . . . that's why they own three LPC TS-300 Motor Scrapers.

LaPLANT-CHOATE

MANUFACTURING CO., INC. ® CEDAR RAPIDS, IOWA, U.S.A.

Cable-operated Scrapers in 6-, 8- and 14-yd. sizes for all makes of track-type tractors.

2- and 4-yd. Scrapers for track-type and rubber-tired industrial tractors.



Hydraulic and Cable-operated Dozers.

foremost in

WATER MEASUREMENT
and
CONTROL INSTRUMENTS

Since 1907

Throughout the world wherever precision measurement is required for proper use and control of water, STEVENS instruments have been a standard of quality since 1907

Whether the need is a simple staff gage, float gage or complex remote operated recorder, there is a STEVENS instrument to meet the requirement. STEVENS recorders give automatic registration of water levels or liquid flow for daily, weekly or longer periods of unattended operation; automatic control of alarms or pumps; direct float operation or remotely controlled operation.

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Measure deep wells; gage rivers, streams, irrigation ditches and reservoirs; measure sewage flow, assemble accurate permanent records of any liquid surface fluctuation. The STEVENS line is complete in the field of water measurement and control.

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STEVENS DATA BOOK

A MUST FOR YOUR REFERENCE FILES

Puts interpretive data at your fingertips. Contains information on float wells and instrument shelters. Complete hydraulic tables. Information on STEVENS water measuring instruments.

Inquiries regarding special liquid measurement or control problems are invited.

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ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 147 — SEPTEMBER 20, 1951 — No. 12

WALDO G. BOWMAN
Editor

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ENGINEERED TYING DEVICES, ANCHORAGES and ACCESSORIES for CONCRETE CONSTRUCTION

"I WAS ALWAYS LOW BIDDER"

"Believe me Mister—when I was in the chips, I was a fast boy with a buck, but I always knew enough not to throw money away on the job. You didn't catch me paying fancy prices for stuff—ever. I learned how to cut corners—and I always said, when you're on the buyin' end —a penny saved is a penny earned. My business was getting bigger every year. I got so I could low-bid 'em all—and things were going swell—till the last couple of jobs. Then something went sour and we were up against it. But I'm telling you now, if you want to make good in the construction business, you gotta buy the best."

THIS JOB IS JINXED — LOOK AT THAT LAST POUR — THE MIX IS WAY TOO THIN
THOSE FORMS AIN'T RIGHT NEITHER — THAT CHISELER OUGHT TO WISE UP AND GET RICHMOND TIES
SCREWY
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INSIST ON RICHMOND
. . . AND BE SURE IT'S RICHMOND!
Richmond
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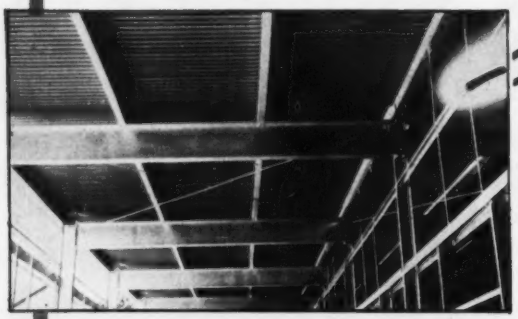
816-838 LIBERTY AVENUE · BROOKLYN 8, N. Y.

Get your "Screwy" or "TY" button—write to Charlie Snyder at Richmond, 816 Liberty Ave., Brooklyn 8, N. Y.

RICHMOND KNOW-HOW—DEPENDABILITY—SERVICE—ESTIMATES & JOB PLANNING

A ROOF DECK OF STURDY STEEL

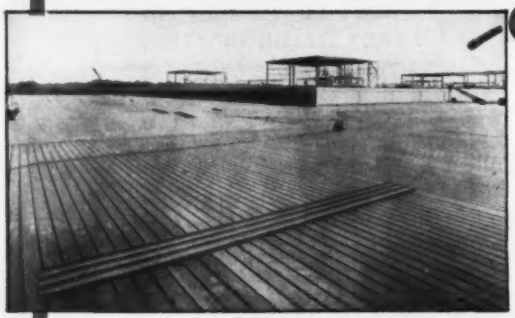


—is lighter!

A roof built with steel roof deck saves weight *two* ways. First, because of the lightness of Wheeling Tri-Rib Roof Deck itself, the weight of the entire roof is reduced. Second, because the smaller dead load allows use of lighter beams, columns and footings, the over-all weight is also reduced.

—quicker to install!

Wheeling Tri-Rib Roof Deck Sheets are quickly laid and are fastened by either welding or clipping. The sheets are easy to handle because of light weight, yet are large enough to give fast coverage of wide areas. Roofing with Tri-Rib also means losing less time in bad weather.



—costs less!

A roof of Tri-Rib usually costs less than any comparable roof, and saves money in permitting lighter supporting members. Made of Cop-R-Loy, the Copper Alloyed Steel, Wheeling Tri-Rib Steel Roof Deck is designed in accordance with specifications adopted by A.I.S.I. for light gauge structures, dated January, 1949.

For specifications, consult Sweet's Files, or write us.

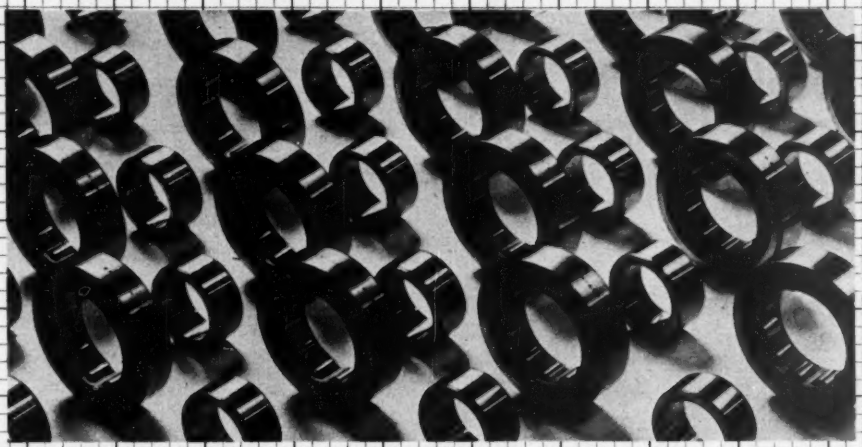
Build with Wheeling Tri-Rib Steel Roof Deck!

WHEELING CORRUGATING COMPANY
WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT KANSAS CITY LOUISVILLE
MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA RICHMOND ST. LOUIS

Wheeling

For Interchangeable Bearing Parts
HYATT HY-LOADS



FASTER, more convenient, and more economical assembly line operations are possible with Hyatt Hy-Load Roller Bearings because their component parts are freely interchangeable.

Separate bearing elements can be assembled on shafts and in housings at different locations. There is no need to mark or tag matching components because the separate parts can be brought together on the assembly line with complete assurance of their perfect mating. Surely, this feature of Hyatt Hy-Loads makes possible more efficient production planning and layout.

* * *

Interchangeability of component parts is just one advantage of the Hyatt Hy-Load line of cylindrical roller bearings. For complete information write for catalog 547. We'll be glad to send one to you. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

Outstanding

BY EVERY STANDARD OF COMPARISON

Use any yardstick you wish to measure the worth of an excavator — range, capacity, speed and ease of control, durability, low maintenance — or that all-important criterion: steady, big-output performance. You'll find that Bucyrus-Eries rate "outstanding" on all, because their advanced design and construction is backed by unequalled experience in building excavating machinery for use all over the world. A complete line of shovels, cranes, draglines, stripping shovels and walking draglines from 2½ to 36 cubic yard sizes provides a machine to fit any job requirement.

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

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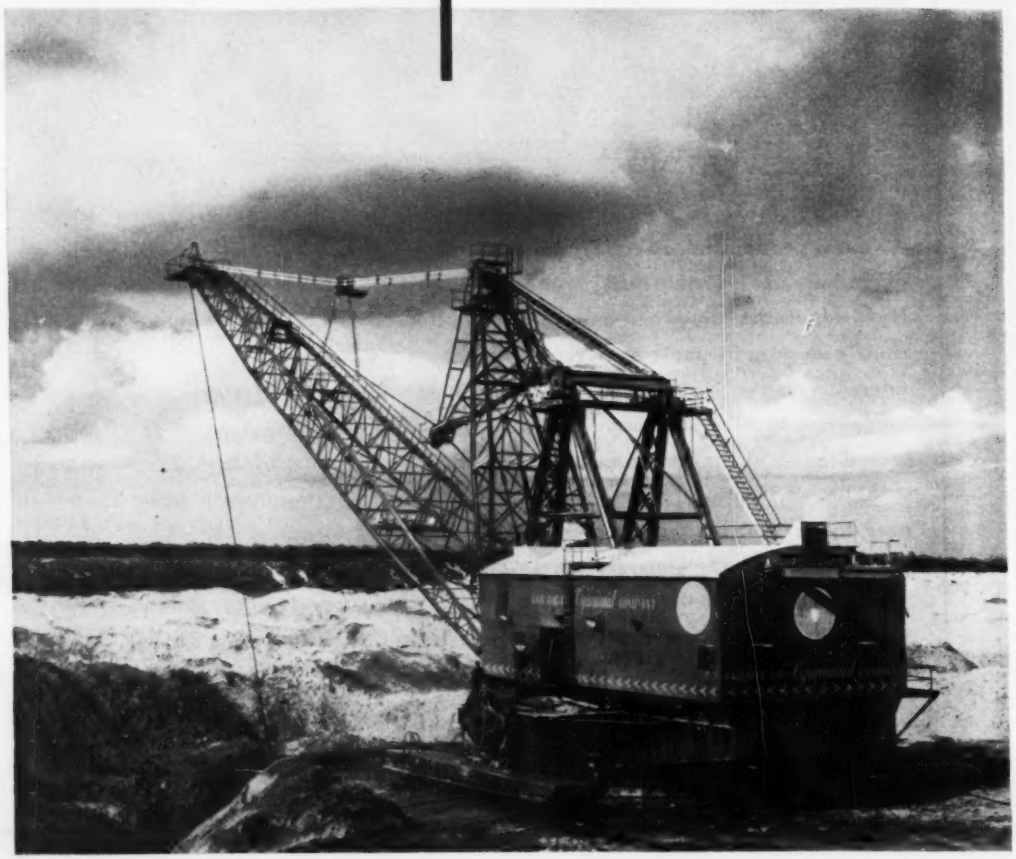
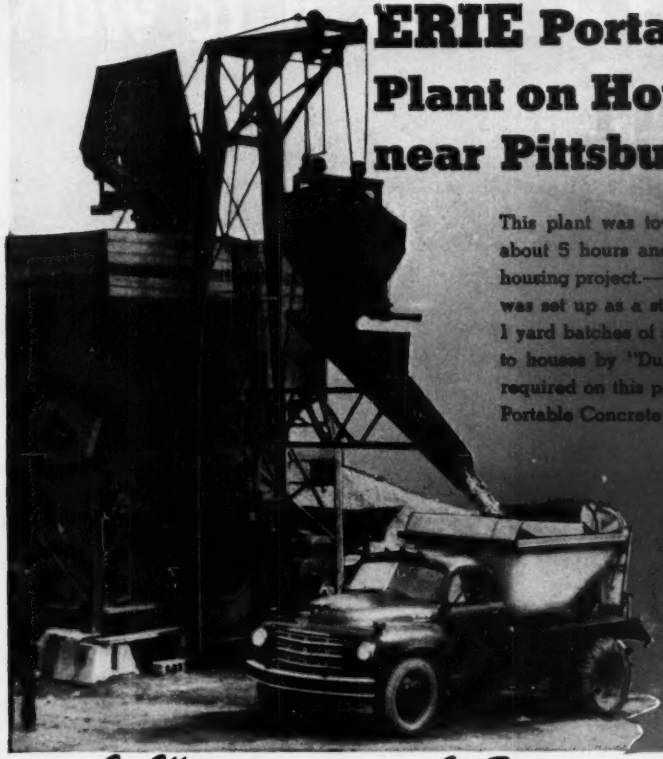


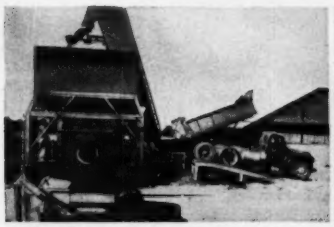
ERIE Portable Concrete Plant on Housing Project near Pittsburgh



This plant was towed from Erie to Pittsburgh in about 5 hours and set up on the site of a large housing project.—Wheels were removed and plant was set up as a stationary concrete mixing plant. 1 yard batches of specification concrete delivered to houses by "Dumpcrete" trucks. All concrete required on this project was provided by this Erie Portable Concrete Plant.

Move Your **CONCRETE PLANT** *from Job to Job and produce up to* **40 CU. YARDS PER HOUR**

In Illinois

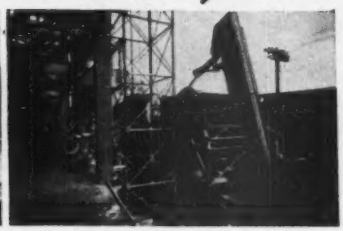


This Erie Portable Concrete Plant, electric motor driven, is set up in a town of 10,000 population to supply concrete within a 16 mile radius. Steam heating makes it possible to operate all year and sales up to 100 yards a day are recorded without taxing the full capacity of the plant.

In Transit

The above Erie Portable is being towed 100 miles to make concrete on a series of building projects. 2 men can get it into operation within 60 minutes and it can be "knocked down" for towing in less time. Booklet SP1 gives complete specifications. Write for copy.

In New York

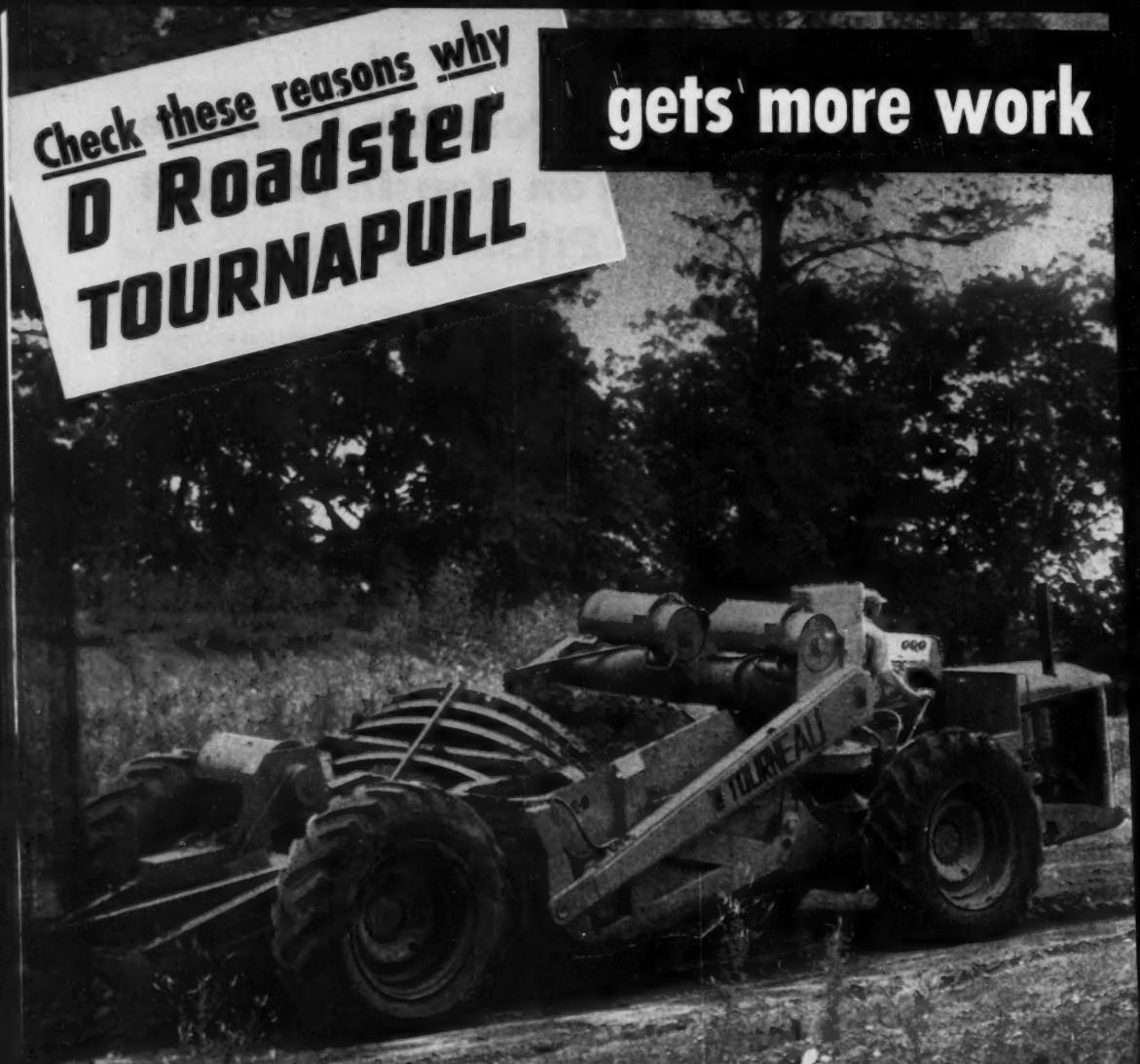


This Erie Portable Concrete Plant is completing here a 6000 cu. yard concrete job and has since been moved to three building sites in Buffalo. Consult with Erie for complete details on the Erie Portable Concrete Plant as applied to your concrete project.

ERIE
STEEL CONSTRUCTION COMPANY

119 GEIST ROAD • ERIE, PENNSYLVANIA

Check these reasons why D Roadster TOURNAPULL gets more work



Every one of these claims is proved by on-job reports from owners of D Roadsters. Ask your LeTourneau Distributor for copies.

Tournapull—Trademark Reg. U. S. Pat. Off. R245

R. G. LeTourneau Inc.

PEORIA, ILLINOIS

done at a lower net cost per job

1 Modern rubber-tired speeds for fast digging and quick moves

This fast-stepping unit has a top speed of 28 m.p.h. You shift gears fast through the 5-speed, heavy-duty, sliding-gear transmission; has positive electric steer for accurate control and snappy maneuvering. You get big, fast tires instead of a crawler's tracks. With "D's" 28 m.p.h. high speed, you get definite production and cost advantages on *both* long or short hauls as well as on odd-job and production assignments.

2 Less downtime for weather, less slowdown for soft and slippery going

Big, low-pressure tires improve traction. Two-wheel prime mover wastes no tractive weight on extra steering wheels. Power-proportioning differential applies up to 4 times more power on wheel having firmest footing. Positive power steer shifts footing as needed for a better pull. All these speed up work cycles, cut downtime for bad weather.

3 Easier to keep busy, handles odd jobs or production dirtmoving

7-yard D Roadster is ready to go anytime at 28 m.p.h. to handle scattered one-machine jobs such as back-sloping, clearing slides and other small-yardage jobs. It also is an effective big-yardage dirtmover when pusher-loaded in fleet operation. This flexibility gives you more effective use of manpower and equipment for your maintenance and construction operations. Both a Snow Plow and Bulldozer blade increase year-round application and make it most profitable tool in your equipment inventory.

4 You save on job-to-job travel over pavement . . . cross country

Your operator drives the Roadster job-to-job over the highway under its own power (and carrying its own supplies). This saves cost of loading, blocking, trucking, low-boy, unloading, plus wasted waiting time. In addition, because the "D" can work-and-run to another one-machine assignment any time, any place, you can speed up maintenance service on your jobs or anywhere around the country . . . any time of year. 25 miles is only about an hour away. Unlike crawler's tracks, big rubber tires do not damage road surface.

5 Faster, easier to operate . . . less fatigue

Good operators are always available for the D Roadster. Push-button electric control makes it faster and easier to control. Big, low-pressure tires, air foam cushioned seat, plus quieter operation eliminate a lot of operator fatigue. This makes for safer, faster, steadier operation, less manpower turn-over. These advantages plus better operator co-operation mean a substantial increase in yards moved and more jobs completed throughout the year. Contact your LeTourneau Distributor for all the facts . . . there's no obligation.

Attachments and interchangeable EQUIPMENT:

7-TON CRANE

V-TYPE SNOW PLOW

BULLDOZER BLADE

REAR-DUMP HAULER

Send for complete facts to: R. G. LeTOURNEAU, INC., Peoria, Illinois

Please send us: ☐ Specifications ☐ Job performance reports on 7-yd., 28 m.p.h. D Tournapull

Name..... Title.....

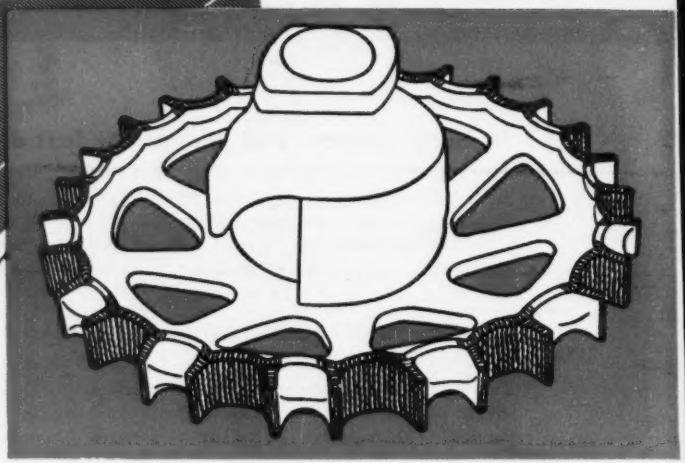
Company..... Street.....

City..... State.....

Also interested in D Tournapull for use with: ☐ V-Type Snow Plow ☐ Bulldozer ☐ Rear-Dump Hauler ☐ 7-ton Crane

LETOURNEAU LET EQUIPMENT

How AMSCOATING with Amsco Hardfacing Rods saves you materials . . . manpower . . . money.



These teeth take bites out of repair costs!

AMSCOATING can make old Tractor Drive Sprockets last 3 times longer than new.

Here's another way to beat the high cost of replacements, down-time and maintenance . . . AMSCOATING the teeth on Tractor Drive Sprockets. Time after time service records have shown that AMSCOATING of sprockets results in these dollar-saving advantages:

1. ***On an average — 3 times the service life of a new, unhardfaced sprocket.***
2. ***2 out of 3 sprocket changes completely eliminated . . . far less down-time, less maintenance . . . more equipment out of the shop and on the job.***

To top it off, sprocket replacements can practically be eliminated. An AMSCOATED sprocket can be reclaimed over and over again . . . *at about half the cost of a new one!*

Get all the facts on how to make these big savings . . . write today for instruction sheet on AMSCOATING sprockets, and the name of your nearest AMSCO Distributor.

AMSCOATING...stands for control of wear by Hardfacing...

Hardfacing rods—and recommendations for their use—are as sound as the manufacturer who makes them. AMSCO has been fighting wear for a half-century—first with Manganese Steel, and later with AMSCO Hardfacing Products.

If you have a problem of wear caused by impact, abrasion, heat or corrosion . . .

Find out how AMSCOATING can save you materials . . . manpower . . . money!

AMSCOATING
THE RIGHT WAY TO SAY HARDFACING

AMERICAN Brake Shoe COMPANY

AMERICAN MANGANESE STEEL DIVISION
379 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

Other Plants: New Castle, Del., Denver, Oakland, Cal., Los Angeles, St. Louis. In Canada: Joliette Steel Division, Joliette, Que.

NEWS BRIEFS

• **Troop carrier installation**—Preliminary work has started on the $28,000,000 troop carrier installation at the Charleston, S. C., municipal airport. Funds for planning have been received and civilian architects and engineers are preparing plans for the Air Force base which will accommodate two wings—about 100 planes.

• **New mining town**—On a rolling plain about 12 miles from Sudbury, Ont., International Nickel Co. is building the town of Lively to accommodate the thousands of workers in the company's new mine at Creighton. Since 1941 the company has allocated more than $9,000,000 for construction of homes and other facilities for employees.

• **Bids too high**—The Bureau of Reclamation has rejected bids received for construction of the Eklutna hydroelectric tunnel in Alaska and has invited new proposals under two schedules rather than the original one. The first schedule will call for a low-level tunnel identical with that advertised earlier while the second will be for a high-level tunnel. If a contract is awarded on Schedule No. 2, bids will be called at a later date for a dam to raise the level of Lake Eklutna. Less excavation would be required under Schedule No. 2. The low bid at the first opening exceeded $20,000,000—almost double the estimate.

• **A.E.C. construction**—The Atomic Energy Commission has announced that the Land Acquisition Div., Corps of Engineers, has begun appraisals of property in Ellenton, S. C. This community and Dunbarton are the largest towns to be taken over in the Savannah River plant area. Curtis A. Nelson, manager of the Savannah River Operations Office says "There will be no indiscriminate disposal or razing of buildings, either in the populated sections or in the farming areas, although construction needs must be considered. We are giving a great deal of thought to the utilization and preservation of buildings and homes."

• **Civil Defense training center**—Purchase of a school site and 260 acres of land near Olney, Md., for a national civil defense training center has been recommended to the Senate by its Armed Services committee. Deputy Civil Defense Administrator J. J. Wadsworth told senators the site would be used for both a staff college and an eastern training center on civil defense. About $1,000,000 will be spent for the site and construction of additional buildings and facilities to train an estimated 3,000 civil defense workers annually.

• **Personnel shelters**—First packaged units in an initial group of 200 emergency personnel shelters for overseas use by the Navy and Seabees have been shipped by the Harnischfeger Corp., Houses Division, Port Washington, Wis. Designed to fit the Navy's needs for hurry-up housing in all parts of the globe, the units are sufficiently flexible to serve as field offices, barracks, for light warehousing, for recreation centers, and for a variety of other uses.

• **Big new VA hospitals**—The Veterans Administration says its long-range program calls for construction of two new hospitals in Cleveland and the razing of Crile Hospital there. Bids will be sought next summer on a 500-bed general medical hospital on a 20-acre site near Wade Park. When that hospital is completed late in 1953 or early in 1954, general medical patients will be moved from Crile Hospital to the new hospital. Crile, originally built as a temporary Army hospital, then will be razed to make way for a 1,000-bed neuro-psychiatric hospital. The VA has no estimate on the probable cost of the two new hospitals. Similar hospitals now being built are costing more than $25,000,000.

• **Mysterious bursts**—Another underwater explosion has been reported in the Wachusett Reservoir of Clinton, Mass. The last similar incident was a year ago. Spectators told police of seeing a giant geyser spout out of the lake. Police theorized the explosion was from depth charges jettisoned into the lake in 1944 by a lost coastal patrol bomber (B-24) before crashing.

• **Rhode Island's biggest industry**—Quonset Point Naval Air Station's payrolls for civil service workers alone are expected to reach $14,000,000 this year. North Kingston, where the station is located, has tripled its fire and police personnel and its population has almost tripled, too.

• **Prizes for community developments**—The National Association of Home Builders is sponsoring another annual neighborhood development contest. Entries may include economy and higher-priced apartments, shopping centers, and complete neighborhood developments. Entries in the form of exhibits showing maps, layouts, floor plans and photographs must be sent

(Continued on page 15)

I build wooden *bridges* — and for longer life, trouble-free service, I always build with decay-and-termite resistant...

BAXCO
CHEMONITE
PRESSURE TREATED LUMBER

TERMITE & DECAY RESISTANT

- CHEMONITE was developed by University of California Scientists.
- CHEMONITE has been proven by over 20 years of use.
- CHEMONITE resists termites and wood-decaying fungi.
- CHEMONITE is non-leaching, clean, odorless and paintable.
- CHEMONITE gives permanent protection to all wood products.
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Yes GO with the GREEN
trustworthy as it's color!

FREE brochure gives you the facts!
Write for FREE brochure! Learn why leading specifiers turn to Chemonite for better, lower cost wood protection!

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P. O. Box 752, Eugene, Ore.

ANNOUNCING

IN FEBRUARY, 1951, two mixes were applied simultaneously to this section of highway. The left side of the road was patched with KOMAC; the right side with another type of patch mix. Both were applied at a temperature of only 25°F. There was no tack coat. No roller was used. The material was compacted under truck wheels only. The three pictures on these pages were taken in April, 1951.

HERE IS A CLOSE-UP of the KOMAC Premix shown in the above pictures. Notice that there is no sign of wear. It is a pleasure to drive on the tough, skid-resistant surface.

THIS IS THE SAME SECTION of highway, but it is a close-up of the side that did *not* have KOMAC. The regular patch mix started to be displaced immediately. Notice that a good two inches of the patch mix have been thrown out by the traffic.

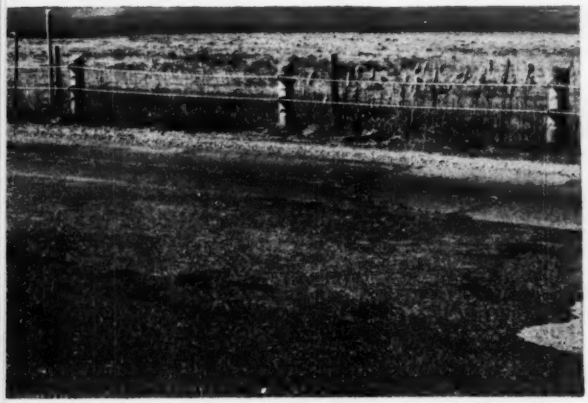
a new patching and paving premix

Komac

apply in any weather . . . directly from stockpile

use standard road repair equipment . . . no heating required

Now, for the first time, you can patch your roads or resurface an emergency road in the dead of winter. You can fill a chuck-hole or rut in freezing cold. You can maintain a continuous patching program the whole year round, and quiet the motorists who cry out against bad roads during winter.



KOMAC Binders, which are offered exclusively by Koppers, can be mixed with local aggregate—wet or dry, dusty or clean. The KOMAC Premix can be stockpiled for a year or more and will remain easily workable. When needed, it can be shoveled into trucks. It will not stick to tools or truck beds or spreading equipment, etc. Since it contains no volatile solvents, there is no fire hazard.

When using KOMAC for patching, the hole doesn't even have to be bone dry. Just sweep out the water, apply KOMAC mix, sprinkle some sand on the patch and compact it. The road is now open for heavy-duty continuous traffic, both winter *and* summer.

If you mix your own road materials, remember that KOMAC is a cold mix. No heating is required. You simply dump the aggregate into a mixer and add KOMAC Binders according to instructions. KOMAC can be easily and quickly mixed in any kind of mixer. KOMAC Premix can be stockpiled during the summer for use in the winter months.

We'll be glad to give you more information on KOMAC Premix so that you can set up a real all-weather repair and construction program. Write today for our free booklet. Address: Koppers Company, Inc., Tar Products Division, Dept. 957TK, Pittsburgh 19, Pa.

KOPPERS

KOPPERS COMPANY, INC.
TAR PRODUCTS DIVISION, DEPT. 957-TK, PITTSBURGH 19, PA.
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Komac Premix

Construction Tires
exactly fitted for their work

When we say "exactly fitted" we mean a construction tire built for the toughest conditions OFF THE ROAD, while giving a smooth long-wearing roll on the highway.

This *off-the-road* and *on-the-road* problem has now been solved. Both construction requirements have been fully met and mastered.

These are the facts about the U.S. ROYAL FLEETMASTER which can contribute to a radical reduction in your tire costs.

These U. S. Royal Fleetmaster facts add up to *reduced tire costs — increased efficiency — lower maintenance!*

- ★ ***70% Deeper Traction Tread!*** (For complete holding penetration OFF THE ROAD! With long-wearing smoothness on the *highway*)
- ★ ***Tougher, Stronger Carcass!*** (Permitting even greater additional safe mileage with more recaps)
- ★ ***Special Tread Compounds!*** (Utmost in cut and chip resistance)
- ★ ***Round-Moulded Carcass!*** (Natural inflated shape reduces distortion strain)
- ★ ***Thicker Under-Tread!*** (Your bed-rock for super-traction and mileage)

A phone call does it! **To your nearest U. S. Royal Distributor! He's listed in the Classified Telephone Book!**

UNITED STATES RUBBER COMPANY

News briefs . . .

in not later than Nov. 15 next to the association at 1028 Connecticut Ave., N.W., Washington 6, D. C.

• **Anti-pollution work goes on**—Pottstown has joined the long list of municipalities which are building new sewage treatment works or constructing additions to existing plants to provide higher degree of treatment under the Clean Streams program directed by the Sanitary Water Board of the Pennsylvania Department of Health. The Municipal Authority of Pottstown, formed to handle the sewerage project, has sold an issue of bonds amounting to $1,300,000 and has awarded a contract at $910,000 for the construction of an addition to the existing sewage treatment plant to provide a higher degree of treatment in accordance with the requirements of the Sanitary Water Board for all municipalities along the Schuylkill River up to and including Reading.

• **Buses damage streets**—City Engineer R. L. Werner of Columbus, Ohio, is quoted as saying that buses cause an estimated $136,000 worth of damage to the city's streets annually. A survey disclosed that taxpayers footed $92,905 in 1949 and $46,352 in 1950 for street repair bills for thoroughfares over which trolley coaches run.

• **Volunteer workers**—People in the neighboring towns of Arnit, Sask., and Westgate, Man., believe in doing things for themselves when the public authorities won't help them. When it became apparent that a road was needed between the two points the people took matters into their own hands and built one. Don Williamson and Trevor Cook donated their Caterpillar tractors, others donated fuel, and a gang of volunteer workmen turned out to help. Soon they had an excellent road built between the two points.

Many Yankees have the same spirit as those Canadians. For example, the people of Paxton, Mass. (pop. 1300), wanted a swimming pool for their young people, but despaired of government help. So they rounded up volunteers, and got the loan of trucks, bulldozers and tons of other earth moving machinery. They picked a site on town land. A pool 200 ft by 160 ft was staked out. Under the direction of the town planning board, engineers and volunteer contractors, the group got to work. Now the pool is rapidly taking shape. The little four-acre pond on the site is being given a real sandy bottom. In time the man-made beaches will have bath house and sanitary facilities.

More Pay Dirt with *ROLL-ACTION*

You can ROLL more than you can PUSH. That's why BAKER Bulldozers, Gradebuilders and Root Rippers are your best investment for earthmoving and clearing. For BAKER blades are scientifically *curved* to give you the utmost limit of rolling action.

That's why they're called the "ROLL-ACTION" blades. Watch them in action—ROLL ACTION—then put them to work for yourself, *pitching bigger payloads* for *your* profit.

BAKER makes a complete line of Bulldozers, Gradebuilders and Root Rippers for the entire line of ALLIS-CHALMERS Crawler Tractors. THE BAKER MANUFACTURING COMPANY, Springfield, Illinois.

Write for Bulletin No. 895 or see your Baker, Allis-Chalmers dealer for full data on . . .

Make Your Next Earthmover a BAKER with Roll-Action!

DATA SHEET

Engineering Advantages and Uses of Armco Steel Pipe

Armco Welded Steel Pipe is a spirally wound and welded pipe made on automatic machines from coils of specially-prepared flat steel. It has many desirable advantages.

1. WIDE RANGE OF SIZES. Diameters from 6 to 36 inches with wall thicknesses from 9/64" to 1/2-inch enable you to meet exact job requirements without buying excess metal.

2. LENGTHS UP TO 50 FEET. Armco Pipe is supplied in any length up to 50 feet. Long lengths mean fewer field joints and lower handling costs.

3. STANDARD OR SPECIAL FITTINGS. Standard dimensional fittings such as tees, wyes, elbows and crosses are readily available for use with Armco Steel Pipe. Special fittings are fabricated to individual specifications.

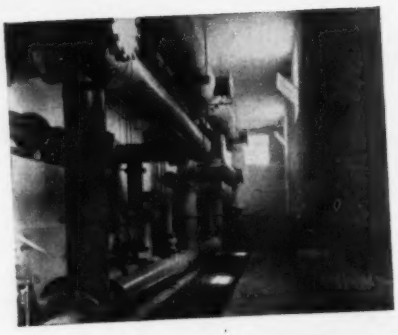
4. UNIFORM WALL THICKNESS. In Armco Pipe you are assured exceptional uniformity in strength and wall thickness because the steel is held to the close under-thickness tolerance of 0.01 inch.

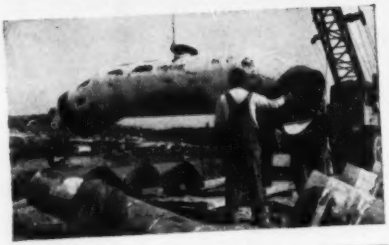
5. ADAPTABLE TO FIELD FABRICATION. Armco Pipe can be readily cut to length on the job. Ends may be supplied beveled for field welding, or for use with steel flanges and other standard couplings.

6. HIGH FLOW CAPACITY. Armco Welded Steel Pipe is smooth inside for high flow capacity and easy cleaning.

7. AMPLE STRENGTH AND DUCTILITY. Armco Pipe is uniformly strong and ductile. It is made from steel of recognized welding quality. Every foot of pipe is carefully inspected and hydrostatically tested before shipping.

8. MILL APPLIED COATINGS. You can have Armco Pipe red mill-coated, hot-dip galvanized to ASTM Specification A 123, or coal-tar enamel protected in accordance with AWWA Specifications 7A.5 or 7A.6.





Where Armco Pipe Can Help You

1. Water supply lines, force mains, bridge crossings and filter plant piping.
2. Pressure trunk and outfall sewer lines.
3. Foundation pipe piles and caissons.
4. Plant process piping.
5. Shore and pontoon dredge pipe.

ARMCO

For detailed information on Armco Welded Steel Pipe write Armco Drainage & Metal Products, Inc., Welded Pipe Sales Division, 3101 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

More scrap means more steel turn yours in today!

THE CONSTRUCTION WEEK

FREEZE THAWS—The government's "freeze" on five-year amortization is thawing. Urgent projects now are being certified by the National Production Authority in this order: Deadline projects which can't qualify unless they are approved before September 23; facilities for military end-items needed to avoid delay in the arms program; facilities for producing critical raw materials, chemicals, metals and cement. Last week 110 certificates were authorized.

POLLUTION BAN UPHELD—Cutbacks on nonessential construction under the defense program are no excuse to abandon sewage disposal plans in New Jersey. Last week the State Appellate Division upheld a lower court order directing West New York, Weehawken and Union City to stop dumping 8 mgd of sewage into the Hudson River, and build a new $1.2 million treatment plant. The order was issued at the request of the Interstate Sanitation Commission in 1948. The municipalities asked the Appellate Division to be relieved of the order. They were refused. "Delays in obtaining some materials do not warrant relief from a decree which by its terms should have been performed by this time," the decision stated.

Contracts by type of work

	This Week	Cumulative 38 wks 1951	1950	% chge
Waterworks	$1.7	$159.0	$171.8	−7
Sewerage	6.7	233.7	198.3	+18
Bridges	14.6	249.7	278.8	−10
Highways	28.7	892.6	951.2	−6
Earthwork, Waterways	38.6	417.0	372.0	+30
Buildings:				
Public	52.1	1,679.9	1,207.6	+39
Housg., pub.	1.9	553.5	211.1	+162
Housg., priv.	35.2	1,433.9	2,610.5	−45
Commercial	6.0	490.3	715.9	−32
Industrial	14.8	2,963.9	1,076.8	+175
Unclassified	32.1	1,315.9	976.6	+35

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR COST INDEX

Index Base = 100	1913	1926	1949
Constr. Cost. Sept. '51	543.21	261.12	113.87
Bldg. Cost .. Sept. '51	400.40	216.50	113.85
Volume .... Aug. '51	452	184	131

TO BE READY NEXT YEAR—Buttress & McClellan, Los Angeles has started work on a $50 million guided missile plant in Pomona, Calif., which will be built of concrete and have an aggregate floor area of 1,200,000 sq ft. Scheduled for completion next year, it will be operated by Consolidated Vultee Aircraft Corp.

BRIDGE-TUNNEL RESTUDIED—Seeking to eliminate State-owned ferries operating between Norfolk and Newport News, the Virginia State Highway Department planned to build a $42-million bridge-tunnel from LaSalle Ave., on the Elizabeth City County peninsula, to Norfolk. The project included a viaduct across the Norfolk Naval Base. But plans ran into opposition from the Navy and the U. S. Army Corps of Engineers. The Navy objected that its security would be threatened. The Engineers objected that commercial shipping might be affected. Now the State Highway Department is seeking another location.

HIT PRIVATE UTILITIES—Secretary of Agriculture Charles Brannan, and Administrator Claude R. Wickard of the Rural Electrification Administration, took occasion to goad private power interests at the recent dedication of a $6-million hydro-electric project on the Flambeau River in Wisconsin. Brannan told a crowd of some 3,000 attending that "Unfortunately the power industry has not awakened and does not appreciate the job in rural electrification that still needs to be done." Wickard told them: "I want to congratulate you and to rejoice with you in the victory that you have won over the opposition which was skillful and relentless."

CIVIL DEFENSE VOLCANO—Watch for civil defense fireworks if municipal officials testify before the Senate Appropriations Committee in the near future. They are hopping mad. They feel that Congress put the bee on them for adequate civil defense preparations and since then shirked its responsibility by not appropriating any money or guidance for a well-rounded plan to protect American cities. Meanwhile, local officials do not know if civil defense plans should be continued or discontinued.

UNIVERSAL Spirolocs

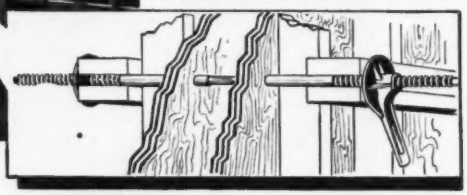
HEAVY DUTY TIES

FASTEST—SAFEST—LOWEST COST

UNIVERSAL Spirolocs—heavy duty Form ties...*Permanent, reuseable equipment*... fast acting Acme threads...washers and stud rods last indefinitely; only *inexpensive* threaded tie rods expended.

Spirolocs provide fast erection...easy stripping... available in various time-saving combinations to fit the exact needs of your job.

RENTED...SOLD



Greater Tie Strength
For less money with Spirolocs

5,000# Ties with ⅜-Tie Rods
9,000# Ties with ½-Tie Rods
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SPIROLOC CONE NUT ASSEMBLY

The only fast acting form Tie with an absolutely positive spreader...assures smooth surfaced, watertight walls.

Write for complete details on SPIROLOCS and ask for catalog describing Universal Form Tying Accessories.

Spirolocs are Furnished with either Handle or Nut Type Washers

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SLIP IT ON

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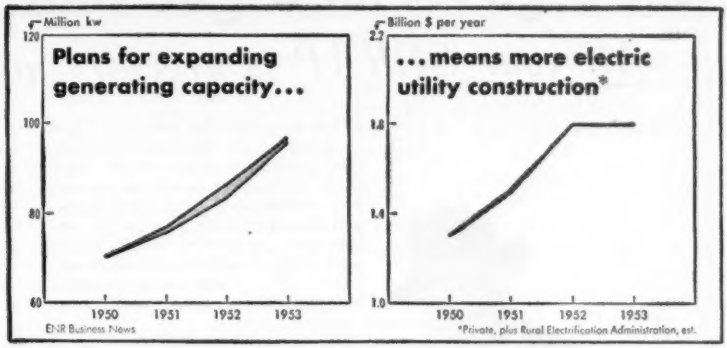
- **EUCLID, OHIO**, 24901 Lakeland Blvd.
- **NEW YORK, N. Y.**, 51 E. 42nd St.
- **BALTIMORE, MD.**, 661 S. Monroe St.
- **SWAMPSCOTT, MASS.**, 51 Barnstable St.
- **HATO REY, PUERTO RICO**, Ave. Munoz Rivera 84—Stop 27½

Service Wherever You Build...Coast-to-Coast

CONSTRUCTION TRENDS



DEFENSE BOOSTS ELECTRIC UTILITY CONSTRUCTION

Construction of electric utilities—at record dollar heights for the past few years—is set to go even higher between now and the end of 1953.

Mobilization accounts for the big jump in utility construction. The U.S. Government has set a target for the industry: a 40% expansion of generating capacity in three years, at a cost of $11–$12 billion for construction and new equipment.

Most of this expansion will be in private power. Private electric light and power companies, plus the Rural Electrification Administration, will put a total of over $5 billion into new construction in the three years 1951–1953. That's one-third more than they spent in 1948–1950, and it's 50% more than they spent in the whole decade of the 1920's.

• **Priority Program**—Electric power expansion is a key part of U. S. mobilization. The defense program concentrates on expanding basic industry. That hits electric power two ways: power is a basic industry; and it's also essential for other basic industries. Big expansion programs in aluminum and chemical industries, not to mention atomic energy, cannot be completed without more power.

As a result, the power program is getting good treatment on priorities. Electric utilities were the first to get advance quotas on steel, copper and aluminum for next year. They can now place orders for part of their shares of the three metals for the first three quarters of 1952. This helps utilities executives to plan well ahead, gives them a chance to be sure they'll get their supplies on time. But, more important, it shows that government controllers are anxious to keep the power program going, will do all they can to help.

All told, expansion of electric power will use up 2½% of all U. S. steel, 6% of all copper, and 17% of all aluminum produced in the three years, 1951–1953.

However, utilities still can't expand as fast as their managements would like. Structural steel is a stumbling block, just as it is for other types of construction. Utilities got only 75% of requirements for the fourth quarter of 1951, don't expect to do much better until some time in the last half of 1952.

But at least the electric utilities got better treatment than a lot of other programs: the Bureau of Public Roads, for instance, got just 43% of the structural steel it requested for building highways.

• **The Outlook**—Tight supplies of structural steel are holding up construction of new electric facilities. But the facilities will still be built—shortages will just postpone some projects for a few months.

Because of their big building program, plus favorable treatment on priorities, electric utilities will make up a larger share of U. S. construction totals over the next couple of years. And construction of electric light and power facilities will stay high even after 1953—the industry is already planning a further expansion of 5% or more a year through 1954 and 1955.

Let's go...let's get that SCRAP in!

All your SCRAP is urgently needed, NOW

THE scrap shortage is serious. *Your* scrap—every pound of iron and steel scrap you can locate in your plant or factory—is vitally needed and needed right away. For unless you do everything possible to get this scrap on its way to the mills, steel production is bound to slow up. That can't be allowed to happen. But without your help it surely will.

It takes at least one-half ton of scrap to make one ton of steel. With the mills turning out more than 2 million tons of steel per week, over 1400 carloads of industrial scrap are needed *every day*. And industry, somehow, must provide it.

What you can do to meet this emergency

First, organize a permanent Scrap Salvage Committee and make the "drive-for-scrap" part of your daily operations. Search out every possible source of scrap. Turn your old and worn-out equipment, tools and machinery over to your scrap dealer, at once. Dig out your discarded dies, rusted-out tanks and boilers, your old rails and other miscellaneous junk, and start them back to the mills through your scrap dealer. Encourage every employee to report every retired or obsolete machine that now stands idle—see that it is turned in for scrap.

By getting this "dormant" scrap off your premises and into the furnaces you'll be helping not only yourself but America as well. *More* scrap turned in, means *more* steel turned out—it's as simple as that. So let's get going.

You'll find your local scrap dealers listed in the yellow pages of the phone directory.

This page would ordinarily be used to tell you about

NATIONAL STEEL PIPE

but, because without SCRAP we cannot produce steel, we are asking instead for your all-out help in getting more SCRAP to the mills.

NATIONAL TUBE COMPANY, PITTSBURGH, PA
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

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UNITED STATES STEEL

Too little science

THE RECENT REFUSAL of Congress to appropriate funds for the new National Science Foundation is symptomatic of a national trait. We are more interested in applied research than in basic scientific studies. And while our preoccupation with the practical has paid off, there is always the distinct danger that the supply of scientific fact and theory, upon which applied science feeds, may run out. Not forever can we leave to foreigners the heavy, theoretical thinking that is so continuously necessary.

Nor is civil engineering immune to this danger of putting the practical on a too-high pedestal, of being slightly disdainful of the theoretical, of assuming that refinements in design are seldom worthwhile. Faced with this situation one can enthusiastically endorse the decision of the American Society of Civil Engineers to establish an Engineering Mechanics Division. The 584 members who petitioned the Board of Direction for the new division stated its purpose to be that of "fostering activity and development in applied mechanics and other basic branches of knowledge which form the background and foundation of the civil engineering profession."

Beyond being a noble objective, this one is backed by an enthusiasm for achievement that is a reaction to the seeming lack of appreciation on the part of many in the profession. Formation of an ASCE Engineering Mechanics Division is therefore not only a challenge to its members, but to the whole profession as well. Next month at the ASCE annual meeting the division will present its first program. It will be a good one. Out of it, and others to follow, should come—must come—a rededication to the principle that science must flourish if engineering is to advance.

Contractor's responsibility

HOW FAR should a contractor go to influence decisions on design matters? That's a question posed in the controversy between Morrison-Knudsen and the city of San Francisco over lining of the Broadway tunnel (ENR Sept. 13, p.29). Briefly, the contracting firm, after failing to get the city engineer to approve its proposal to use a heavy type lining throughout the tunnel, has given copies of its correspondence with city officials to the local newspapers in what appears to be an effort to arouse public support for its proposal.

Legally, a contractor assumes no responsibility for the engineering soundness of a project he contracts to build. That is solely the engineer's. But reputable contractors, quite generally, have assumed a moral obligation for pointing out to the engineer what appear to them to be deficiencies in the design. At that point, any moral responsibility assumed voluntarily by the contractor should end, unless perchance the deficiencies appear to him to be so serious as to warrant his going to the owner, should the engineer ignore his recommendations.

This the contractor on the Broadway tunnel did by its letter to the city's director of public works. Going further in the hope of arousing public support through newspaper publicity lacks evident justification. Reputations can be injured by that route, motives impugned and fundamental questions beclouded by trivial issues. Engineering decisions should not be made on the basis of public clamor.

In the case of the tunnel at San Francisco, where the city engineer had the advice of able consultants, it is difficult to believe that his design is so deficient as to justify the contractor going beyond laying his recommendations before him and his consultants; and then accepting their decision as final.

Startling discovery

RIGHT NOW, when everyone is weighted down with worries over shortages, is the time for announcement of a spectacular new material. Something like this:

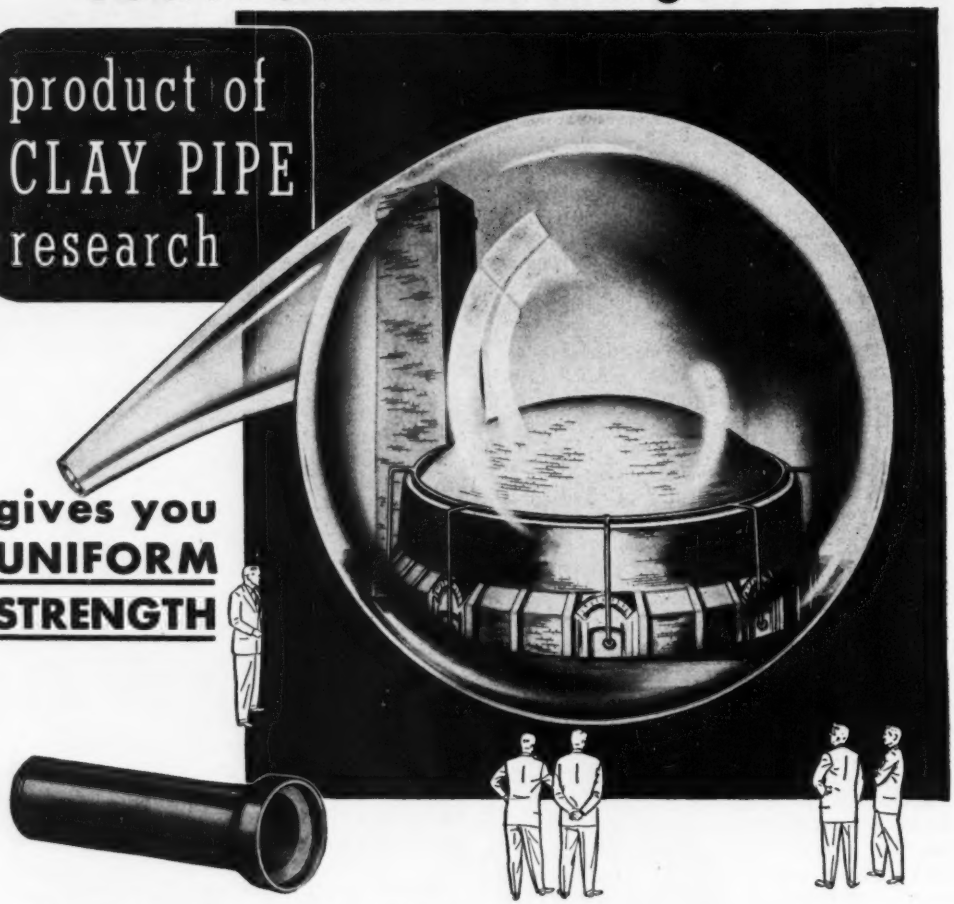
"Out of the researchers' laboratories has come an amazing new product. It is to be had in vast quantities. The supply renews itself so the product will always be available. It is strongly competitive in cost. It will not shatter when struck. Its resilience permits it to absorb shocks which would crack or break other materials. It has fine natural insulating qualities. It can be produced in large sizes when large sizes are needed. It can be readily worked into items of exceptional delicacy. It stands up ruggedly under abuse. When protected from moisture it will last indefinitely. Left in its natural state, it offers an infinite variety of beautiful patterns. Painted, it presents a smooth, attractive, enduring surface. Its cellular structure causes it to absorb and deaden sound."

Actually, this panting bit of prose describes, without exaggeration, one of our oldest and most abundant building materials—wood. It was written by H. V. Simpson, executive vice president of the West Coast Lumbermen's Association.

Descriptions in like vein could probably be drafted for other materials, proving that we often forget how fortunate we are. Such realization, of course, won't get any more CMP orders or enhance the value of those in hand, but it might direct attention to the one way out of the present shortages—conservation of what we have. A really startling discovery would be that through better design and more efficient use available supplies of materials could be stretched as much as 20 percent.

controlled firing...

product of CLAY PIPE research



gives you UNIFORM STRENGTH

CONTROLLED FIRING . . . is a factor behind the *uniformity* of Vitrified Clay Pipe — whether it's one length, or a million. Electronic instruments correctly balance Clay Pipe firing time and temperature. This modern technology, harnessed to govern manufacturing processes, *improves* Clay Pipe's basic quality. Clay is chemically inert, completely unaffected by corrosion or the chemical wastes of modern industry. It's the *best* pipe for *your* sewerage or drainage projects.

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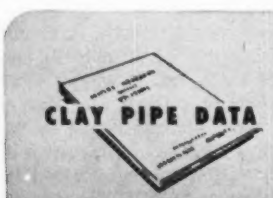

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Additional information and data on Vitrified Clay Pipe, Wall Coping and Clay Flue Lining sent FREE on request. State your specific questions. Simply contact the regional office nearest you.

Vitrified CLAY PIPE

CLAY PIPE NEVER WEARS OUT!

C-151-11

ENGINEERING NEWS-RECORD

SEPTEMBER 20, 1951 VOL. 147 NO. 12

Bid rules ease for Air Force $500 million dormitory plans

New policy announced by Army Engineers makes offering alternate proposals easier and more simple; will use standard designs as basis for construction program

A $500-million dormnitory program for the Air Force will be the proving ground for a new Defense Department policy that liberalizes and simplifies the offering of alternate proposals by bidders.

The Army Engineers–who handle all construction for the Air Force–announced the broadened bid base this week.

It takes effect immediately in all 46 district offices of the Corps of Engineers. The district engineers are the contracting officers in their respective areas for all Air Force and Army construction.

• **Rules given**–Under the new rules, projects will be advertised at least 30 days in advance of bid openings to allow time for bidders to work up alternates. Actually, they can start studying the possibilities for alternate proposals at once. The Air Force program will utilize uniform, repetitive designs for dormitories, cafeterias and administration buildings.

Complete sets of Army Engineer plans and working drawings for all these structures are being distributed by the district engineers to builders' exchanges and similar contractor centers around the country. There prospective bidders can begin examining the basic plans at once.

It was thanks to a brief lull–while awaiting action on pending military construction bills–that the Army Engineers had a chance to complete standard plans for the program in advance of construction.

• **Plan simplifies**–Ground rules are eased for contractors who want to offer alternates. They have to submit simple specifications and drawings only for those elements of the design where their alternate proposals depart from the standard design.

The alternate drawings need be only sufficient in detail to permit ready evaluation. Any part of the project not covered by the bidder's drawings and specifications under the alternate will be assumed to conform exactly with the government's standard design.

When an alternate bid is low, the district engineer will forward the plans and specifications for the alternates to the Office of the Chief of Engineers for final decision. OCE will make a second evaluation of the alternate proposal and get Air Force approval before notifying the contracting officer to made the award. As a last step, the low bidder will submit complete working drawings and specifications–satisfactory to the contracting officer–for the alternate elements of the job, before starting construction.

• **No let down**–Easing of the bidding regulations for alternates does not open the door to cats and dogs. Bidders' alternates, the chief of engineers makes plain, must be comparable and equivalent to the standard items in the government plans and specifications. As he states the requirements, an alternate must be comparable in appearance and equal in quality, life expectancy, fire resistance, insulation, maintenance economy and structural soundness–as well as in completeness of equipment, fixtures and accessories. An alternate that is not every bit as good as the original won't be accepted.

Admitting alternates is no new departure for the Corps of Engineers. It is only the method of submitting the alternate proposals that has been broadened.

For the last 18 months, since March 17, 1950, the engineers have invited alternate proposals for Army and Air Force structures–particularly for the "uniform" (repetitive) buildings. But the invitation has found few takers.

• **Response weak**–There were good reasons for the weak response. First of all, the regulations required the bidder to submit with his bid complete plans, working drawings and specifications–equivalent in detail to the government's own stack of contract documents. Second, the urgency of the earlier defense program shortened the interval between advertising and bid opening to only a week or two for many projects. And finally, many a designer or manufacturer with a sound idea ran into heavy going when he tried to sell his alternate concept to contractors who were going to bid the military jobs.

The Defense Department is more than ready to broaden the base for alternate proposals. Its move comes at a good time. In fact, Congress has left the department little choice.

• **Double protection**–Admitting alternate proposals under the liberalized requirements now set up gives the department two-way protection. The new regulations should satisfy congressional watchdogs that worthwhile alternates will now get a fair chance to prove their money-saving value. That assurance will take some of the heat off congressmen–under constant pressure by dissatisfied constituents who claim that their ideas and products are not getting a fair hearing.

At the same time, the new rules are strict enough to weed out alternates that don't measure up to the established criteria. Each set of plans and working drawings–as supplied to contractors' information centers throughout the country–bidders can count on

(Continued on p. 24)

Construction Bill OK'd

The $5,864,301,178 military construction bill–largest ever to be approved by Congress in a single package –was passed this week by the Senate and House and sent to President Truman for signature.

The compromise version adopted by Senate-House conferees, requires the services to clear in advance with the House and Senate Armed Services Committee all real estate purchases, sales, leases or transfers involving $25,000 or more.

The final version eliminated provision for a $23 million troop carrier base in Goldsboro, N. C., the location of which was under controversy. It contains several items added by the Senate to the House version, among them:

Army storage and depot facilities, $50 million (no specific locations given); Marine Base at Quantico, Va., increased to $6.6 million; Marine base at Oahu, Hawaii, increased to $18.2 million; Marine base at Twenty Nine Palms, Cal., increased to $15.4 million; and Marine base at Camp Pendleton, Cal., increased to $24.8 million.

SPEAKS TO BOARD OF ESTIMATE—New York City Construction Coordinator Robert Moses (left, standing at end of bench) speaks at a hearing of the Board of Estimate last week. He favored authorizing the Board of Transportation to offer the Long Island Railroad $8.5 million for the road's Jamaica Bay Rockaway branch. Authorization was unanimously approved.

As Board of Estimate Acts

Plans advance for $500 million subway, $80 million tube in New York City

Big plans to improve its transportation system were ripening in New York City last week.

Its Board of Estimate approved a $500-million expansion program for the city's rapid transit service.

Its Board of Estimate also received for consideration a controversial proposal for an $80-million third tube for Lincoln Tunnel to midtown Manhattan, complete with a $20-million extension and enlargement of existing connections between the tunnel and the street system.

• **Transit plan**—Construction of a six-track trunk line subway under Second Ave. with connections linking it to existing lines in Manhattan, Brooklyn, Queens and The Bronx was unanimously voted by the Board of Estimate as recommended by the Board of Transportation.

Voters of the state must approve a constitutional amendment granting debt limit exemption to $500 million of city bonds to be issued to finance city transit improvements, before the project can be undertaken.

• **Costs cited**—Construction of the subway from Grand St., Manhattan, to 149th St. and Third Ave. in The Bronx, and connections will cost an estimated $455 million based on last January's prices. The job is to be completed in five years except for one connection less than a mile long. Administration, engineering and overhead charges are estimated at $45 million.

The Board also authorized the Board of Transportation to make an $8.5-million offer for city purchase of the Rockaway Beach branch of the Long Island Railroad. The city plans to reconstruct and rehabilitate this branch at an estimated cost of $40 million for operation as a unit of the municipal transit system.

• **Tunnel fight**—Dumped in the lap of the Board of Estimate last week was a battle between the Port of New York Authority and the City Planning Commission over a proposed third tube for the Lincoln tunnel.

The Planning Commission made an adverse report on the proposal, terming PNYA plans for a $20-million extension and enlargement of existing connections between the tunnel and the street. Construction Coordinator Robert Moses indicated the only adequate plans to handle more traffic from the tunnel would involve "direct off-street connection with adequate express highways, either existing or to be constructed, including a cross-Manhattan Expressway and the Miller (West Side) Highway."

The PNYA has accused the Planning Commission of a "dog-in-the-manger" attitude in blocking construction of the tube "unless the Port Authority contributes $30 million to the cost of a $90-million expressway that has only a minor relation to the problem."

• **Defies veto**—The adverse report brought a statement from Howard S. Cullman, chairman of the New York Port Authority, that the decision of the City Planning Commission was "amazing and irresponsible." Mr. Cullman says he is sure the Board of Estimate, which now has the proposal before it, will overrule the City Planning Commission.

As evidence of its confidence, the PNYA hired Charles L. Crandall as consulting engineer for field work on the tunnel project, and awarded a $26,900 contract for test borings to Sprague & Henwood, Inc., 11 W. 42nd St., New York.

It also voted to authorize solicitation of bids for foundations for decking over the tracks of the New York Central Railroad between 40th and 41st St. between Tenth Ave. and Eleventh Ave.

NPA construction official resigns post in protest

Maynard Johnston, southeastern director of the National Production Authority's Construction Division, last week resigned his post in protest.

The Construction Division is "a political football," the Atlanta contractor charged. He said the principal accomplishment of his office during the past two months has been to halt almost all construction in the southeast. He was responsible for approving or turning down construction requests in his region for steel allotments over 25 tons.

"The NPA is badly confused," he said. "Policies have been constantly changing. About every two weeks there is a change in something that would reverse what you had already done."

He will be succeeded by his assistant, John Nutting, Atlanta, Ga.

Bid rules ease . . .

(*Continued from p. 23*)

favorable consideration for any economical alternate they propose.

Army Engineers have no illusions as to a happy life for them under the new open-door policy.

NPA sets new limits on controlled metals

New limits have been set on the amount of controlled metals which may be used without certification by utilities in constructing garages, warehouses, and other non-plant facilities.

Certification is required from the National Production Authority if construction of such facilities requires more than 200 lb of copper, two tons of carbon steel or any alloy steel or aluminum.

Jacksonville-Miami turnpike studied

A proposed 350-mi Jacksonville-to-Miami toll turnpike is under study by Florida's State Road Department.

Surveys on feasibility of the $100-million project were authorized last week by the Florida State Improvement Commission, but the commission made it plain that it is not yet committed to the proposal.

Gov. Fuller Warren, head of the Improvement Commission, said: "We are now visited by 5,000,000 people each year. I believe that ten years after completion of an east coast turnpike, 10,000,000 tourists will come to Florida annually."

His proposal was met by a chorus of objections from chambers of commerce in Daytona Beach and St. Augustine, and by the Motor Court Association. They fear they would be bypassed and their business would suffer. They favor improvement of the existing U. S. Route 1 and A1A.

• **Tampa Bay Bridge**—The action was taken as the Improvement Commission met to accept a lone bid from A. C. Allyn & Co., Chicago, and Childress & Co. Jacksonville, jointly to finance the $21.2-million Tampa Bay Bridge.

The single bid offered a 3.75% interest rate. This compares with the 26.2% interest rate on the $28-million bond issue sold last October to help finance the $50-million Jacksonville project which includes two bridges and 40 mi of expressways.

Construction already has been started on the 14-mi toll bridge across Tampa Bay which will cut off 49 mi. from the Pinellas Peninsula where St. Petersburg is located to points further south on the west coast. It will bypass Tampa.

Work under way is on contracts totaling $1.5 million. Contractors' bids on additional work totaling about $11.5 million are on hand but have not been awarded pending action on the bonds. The bond bid was accepted partly because a rejection would hold up work on the bridge.

• **Other projects**—The Improvement Commission also has directed studies of two additional projects adequate to permit sale of revenue bonds to finance them. They are:

In Broward County, Fort Lauderdale,—a $15-million project involving a tunnel and construction or relocation of 10 bridges. It would be financed with $13 million of bonds, the rest to come from Road Dept. funds. (ENR June 1, 1950, p. 56.)

In Martin County, Stuart has a $3 million project involving construction of two bridges running from Stuart across St. Lucie and Indian Rivers to the beach.

CMP requests due Oct. 1 from residential builders

Builders and sponsors of multi-family residential structures who need controlled materials (steel, aluminum and copper) for the first quarter of 1952 must file an application by October 1, Administrator Raymond M. Foley of the Housing and Home Finance Agency has announced. A multi-unit family structure is one that contains more than four family units.

They must file on the National Production Authority form CMP-4C, which will serve both as an application for authorization to construct and as an application for allotment of steel, copper, and aluminum. Copies of the form may be obtained from field offices of the Department of Commerce. They should be filed as follows:

• Builders of private multi-family housing (whether conventionally financed or FHA-insured or VA-guaranteed) will file in local offices of the FHA.

• Builders of public multi-family housing (federal, state or local) will file with field offices of the Public Housing Administration.

Merritt, Chapman & Scott, Savin win Folsom award

Contract for construction of Folsom Dam on the American River at Folsom, Cal., has been awarded to Merritt, Chapman Scott Corp., and Savin Constr. Corp. on a low bid of $29,444,000.

This bid was lowest of seven joint bids submitted by groups of contractors which included up to eight companies. Thirty-five contracting organizations participated in the bidding.

Work on the multiple purpose dam is to start immediately. It's main concrete section will be 1,400 ft long, with wing embankments of rock and earth extending in overall length to over two miles.

Atomic work rushed

The Atomic Energy Commission has disclosed that more than 1,000 workmen are rushing completion of nine buildings, including a $1-million firing control site, at the Frenchman's Flat atomic proving grounds 80 miles north of Las Vegas, Nevada.

Thick pavement specified for Oklahoma turnpike

Surfacing having total thickness of 24 in. has been specified for the 88-mile toll turnpike now being built from Oklahoma City to Tulsa by the Oklahoma Turnpike Authority, according to H. E. Bailey, general manager for the authority.

Grading contractors are required to place a subbase of selected material to a depth of 16½ in. on all fills and through all cuts. When paving contractors move onto the job they are to reshape this to give a minimum depth of 12 in. under the pavement, using excess material for shoulders and in the median zone.

Specifications for both portland-cement concrete paving and asphaltic concrete paving have been prepared by De Leuw, Cather & Company, consulting engineers to the authority, so that bids can be taken on both types. For either type, the pavement and base will have a total thickness of 12 in. on a subbase 12-in. thick.

• **Looks ahead**—This pavement is designed for 28,000-lb axle loads.

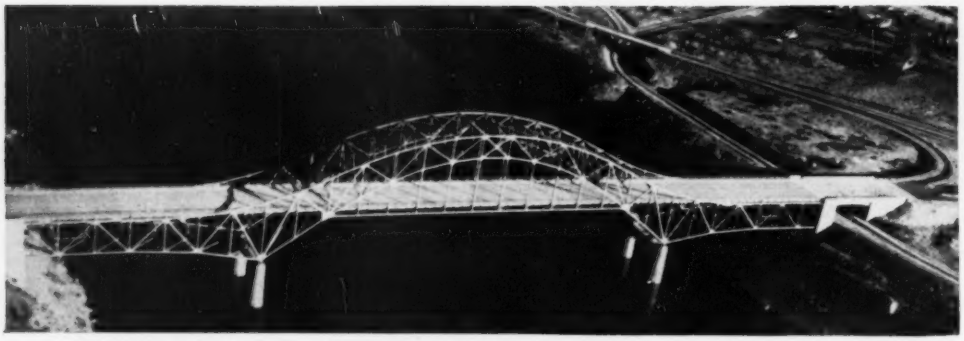
Two types of portland-cement concrete paving are in the specifications. One consists of 9 in. of concrete on a 3-in. sand cushion, and the other is 8 in. of concrete on a 4-in. cushion.

Three types of asphaltic concrete surfacing have been set up. They are 5 in. of asphaltic concrete on a 7-in. base of stabilized aggregate; 6 in. of asphaltic concrete on a 6-in. base; and 8 in. of asphaltic concrete on a 4-in. base of stabilized aggregate. This wide range in types of bituminous pavement was set up by the consulting engineers because aggregate of a grade that can be used for the stabilized base is more available on some parts of the highway than in others. There is a producer of asphalt located at about the center of the project.

• **Protest made**—Requiring a subbase 12-in. thick under a pavement of portland-cement concrete of the thicknesses set up for this job was protested by the Portland Cement Association. This association's representative argued that a 7½-in. base would be adequate for the design loads.

On one nine-mile section of the highway for which specifications have been completed, the engineers estimate the cost of the two types of concrete pavement at $840,972 and $852,564 for the 8-in. and 9-in. respectively; and $751,792, $791,694 and $859,111 for the 4, 5, 6 and 8-in. thick asphalt.

It is expected that grading contracts will be let by the end of September for the entire project except about three miles through Sapulpa. Bids on the paving work will be taken in September or October.



CLASS I WINNER—Columbia River Bridge at Wenatchee, Wash.

Winners awarded plaques

AISC awards plaques to steel bridges chosen most beautiful built in 1950

The American Institute of Steel Construction last week announced the award of stainless steel plaques for three bridges selected as the most beautiful steel bridges opened to traffic in the U. S. during 1950.

Bronze plaques will be given for six bridges receiving honorable mention.

The winners in the contest, which has been conducted annually by the institute since 1928, were selected by a jury of architects and engineers from a field of 97 entries, which was more than double the entries last year.

THE WINNERS:

Class I, spans of 400 feet or more: *Columbia River Bridge*, Wenatchee, Wash.—Owner, State of Washington Department of Highways; designer, George Stevens, bridge engineer, State of Washington, Dept. of Highways; fabricator, American Bridge Co.

Class II, spans under 400 feet, costing over $500,000: *South Holston River Bridge* on Tennessee State Highway 34, Sullivan County, Tenn. Owner, State of Tennessee; designer, Tennessee Valley Authority; fabricator, Virginia Bridge Co.

Class III, with spans under 400 feet, costing less than $500,000: *Caldwell Avenue Bridge*, over Edens Expressway, Cook County, Ill. Owner, Cook County, Ill.; designer, Cook County Highway Dept., J. Edwin Quinn, architect; fabricator, Bethlehem Steel Co.

HONORABLE MENTION:

Class I: *A. Piatt Andrew Bridge*, Route 128 over Annisquam River in Gloucester, Mass.—Owner, Massachusetts Dept. of Public Works; designer, Massachusetts Dept. of Public Works; fabricator, Bethlehem Steel Co.

Class II: *Yazzo River Bridge*, U. S. Highway No. 61, north of Vicksburg, Miss.—Owner, State of Mississippi; designer, Charles S. Hill, bridge engineer, Mississippi State Highway Dept.; fabricator, Virginia Bridge Co., truss spans, Bethlehem Steel Co., approach spans.

G. H. & S. A. Railroad Overpass, Gulf Freeway over G. H. & S. A. R.R. and Grigg Road in Houston, Harris County, Tex.—Owner, State of Texas; designer, Texas Highway Dept.; fabricator, Virginia Bridge Co.

Class III: *Route 4 Parkway (Garden State Parkway) Overpass*, at Route 25, Middlesex County, N. J.—Owner, State Highway Dept., of New Jersey; designer, Division of Bridges, New Jersey State Highway Dept., Morris Goodkind, Director and Chief Bridge Engineer; fabricator, Phoenix Bridge Company.

Mantion Road Barge Canal Bridge, towns of Greece and Ogden, Monroe County, N. Y.—Owner, New York State Dept. of Public Works; designer, Office of the Deputy Chief Engineer, Bridges, Grade Separations and Structures, New York State Dept. of Public Works; fabricator, Phoenix Bridge Co.

Swatara Creek Bridge, over the Swatara Creek, near Harrisburg, on the Eastern Extension of the Pennsylvania Turnpike.—Owner, Pennsylvania Turnpike Commission; designer, Modjeski and Masters, Harrisburg, Pa.; fabricator, Harris Structural Steel Co.

Niles Street Pedestrian Overpass, relocation of Route 2 in Leominster, Mass.—Owner, Massachusetts Dept. of Public Works; designer, Massachusetts Dept. of Public Works; fabricator, American Bridge Co.

Edward J. Cleary named public works assn. head

Edward J. Cleary, executive director and chief engineer of the Ohio River Valley Sanitation Commission, Cincinnati, was named president of the American Public Works Association at its annual meeting in Detroit's Veterans' Memorial building Monday.

Prior to joining the Ohio River Valley Sanitation Commission, Cleary served as sanitation specialist for Engineering News-Record.

Newly-named area vice-presidents of the Association are Allan H. Rogers, superintendent of public works, Garden City, N. Y.; Milton Offner, secretary, Board of Public Works, Los Angeles, Cal.

J. J. Dean, construction superintendent, Albany, Ga., was named director of the Association. Re-elected as director was Sol Ellenson, director of public works, Newport News, Va.

Edward P. Decher, secretary and purchasing agent, Joint Sewer Commission, Newark, N. J., was elected treasurer succeeding Rogers, who was elevated to a vice-presidency.

$13-million bridge opens to Philadelphia traffic

When the new $13.7-million Penrose Ave bridge over the Schuylkill River was formally opened last week, it became the largest bridge completed in the Philadelphia area since construction of the Tacony-Palmyra Bridge in 1929.

It crosses the river with a cantilever span 680-ft long, providing 135-ft clearance at high water. Approaches extend 2.4 mi and carry two 24-ft roadways separated by a 3-ft strip with 5-ft sidewalks on each side.

The span provides a direct link between the central city and South Philadelphia to the southwest section and International Airport.

New army district set

A new Army Engineer district to handle off-continent military construction projects in the Atlantic ocean, from Bermuda north, was announced last week by Lt. Gen. Lewis A. Pick, chief of engineers.

The new district, named the Atlantic district, will be responsible for all projects in the designated ocean area except projects otherwise assigned. Headquarters of the district are at 80 Lafayette St., New York City.

Col. Charles T. Tench is the district engineer. He was formerly fifth army engineer at Chicago.

Meetings set to resolve Broadway tunnel dispute

Engineers for the city of San Francisco and for Morrison-Knudsen Co., are holding a series of meetings in an attempt to resolve their differences on the specifications for the lining of the $6-million Broadway tunnel. (ENR Sept. 13, p. 29)

The contractor insists that the horseshoe-shaped lining for the 282-ft-wide twin tunnels called for in the city's plans is inadequate, suggesting that a near-circular type be substituted. City engineers contend that findings of their consulting engineers show the lining specified is entirely safe and adequate.

In reporting plans for the meetings, Public Works Director Sherman P. Duckel disclosed that the city's position is further supported in a new study by John P. Buwalda, professor of geology at California Institute of Technology.

H-Bomb Plant Construction To Cost Over $1 Billion

An addition of $484 million for the Atomic Energy Commission's Savannah River H-bomb plant, was requested of Congress early this week by President Truman.

This addition brings the total for the South Carolina project to $1.1 billion which is now the total estimated cost of construction.

The budget bureau said original lower estimates were made before the site was selected, the scope of the project determined, and "before the full impact of the post-Korean cost increases was felt."

To date $695.7 million already has been made available for the project. It is now in early stages of construction.

Philadelphia city program reported

A six-year public improvements program to cost $558 million that aims at complete modernization of large sections of Philadelphia has been submitted by the City Planning Commission to Mayor Bernard Samuel.

The program includes some projects finished or currently under way. It is the commission's first report under the new Philadelphia Home Rule Charter which goes into effect next year. The charter calls on the mayor to submit to council a six-year capital program and a capital budget for the next ensuing year.

• **Comprehensive program**—Federal, state and township sources will bear part of the total cost, the commission said. The program which is for 1952 through 1957 is based on many scheduled or continuing projects.

Among them is the complete construction of the $80-million Schuylkill Expressway; Roosevelt Boulevard and Vine St. extensions, reconstruction of Roosevelt Blvd. from Oxford Circle to 9th St.; construction of the first link of the Delaware Expressway from Penrose Ave. Bridge across South Philadelphia to the projected new crossing of the Delaware River; bridges and highway programs. (ENR May 3, p. 120.)

It also includes rebuilding in the mid-city area about the Independence Hall section

• **Others listed**—Completion of the $69 million sewage treatment program; advancing storm-water flood control; a $29.6 million program to improve the city's water; additional health centers; completion of principal remaining improvements needed at the Hospital for Contagious Diseases, making this into a general hospital.

Plans call for improvement of welfare institutions and prisons; completion of the police station modernization program; the greatly advanced fire house program and the traffic control system.

• **Finances outlined**—The City Planning Commission in its report assumed that the voters this November will adopt the constitution amendment limiting Philadelphia's borrowing capacity to 13¼ per cent of the average assessed value of real estate over the previous ten years.

The money for the program will be provided in this way: $319,315,764 from state, federal and township sources; $17,243,708 from current income; $71,262,000 from loans for self-supporting projects; $91,071,124 from new loans within the general debt limit; $59,575,800 available from loans already authorized.

Prestressed concrete bridge bids disclosed

W. J. Storen Co., of Detroit, Mich., was low bidder on a 150-ft long prestressed concrete bridge on 12-mile Road, near Detroit. The low bid—$136,675.90—was only $1,500 larger than L. A. Davidson bid.

To be built on a 45-deg skew, the bridge will carry a 24-ft roadway over three 48½-ft spans. Each span will be composed of concrete I-beams side by side, with flanges touching. The beams will be 24 in. deep. Webs will be 2 in. thick. Flanges will be 16 in. wide, the top flange being 3 in. thick and the bottom 2 in. thick.

The bridge was designed by Johnson & Anderson, Pontiac, Mich.

Seaway vs. power

Michigan is to oppose a New York State power project in the St. Lawrence River in a pending Federal Court suit in Washington, D. C. It contends the project would conflict with the St. Lawrence Seaway project.

The State is to file for an appearance to argue as a friend of the court that navigation has priority.

NEWWA talks controls; sees new GE water film

Tell your claimant agency how soon a planned project must be completed if you want to get the controlled materials needed in time to build it. This was the advice W. L. Picton of the Defense Production Authority gave the New England Water Works Association in Boston last week.

• **Fluoridation**—In a session on fluoridation, H. A. Faber, of The Chlorine Institute, stated that there are now 103 cities fluoridating water in 25 states as a tooth decay preventive. Add those now already committed but not yet in operation and the total tops 200.

• **Early showing**—The NEWWA meeting got an unscheduled look at General Electric's new 25-minute color-sound film, "Pipeline to the Clouds," which had just had its press preview in New York City.

This educational tool, prepared by GE with technical assists from the American Water Works Association and the U. S. Public Health Service, is offered for organization use on either loan or purchase basis. Its nontechnical text seeks to enlist support behind waterworks projects.

Plans for a safer Penn Turnpike discussed by users at Harrisburg

Users of Pennsylvania's toll highway discuss operating conditions at conference called to consider new plans for traffic control.

Speeds higher than are necessary or desirable on a busy highway and lack of adequate policing are the chief reasons for the much publicized accident record of Pennsylvania Turnpike. This conclusion was expressed repeatedly by users of the turnpike at a conference held in Harrisburg Sept. 6-7.

Thomas J. Evans, chairman of the Pennsylvania Turnpike Commission, told the users at the opening session of the conference that it had been called to get frank expressions from users as to how operating conditions on the highway could be improved and to tell them of new plans the commission has for reducing the accident frequency.

• **Speed control**—Among the proposed changes are some relating to speed, but none calls for any cut in authorized speeds on the turnpike below the 50 mph limit placed on commercial vehicles by the commission a few weeks ago. The passenger car limit was and still is 70 mph, or 20 miles above the statutory limit on free highways in Pennsylvania.

Since the new limits went into effect the commission has begun the installation of flashing signs at all entrances to tell users what the legal speeds now are.

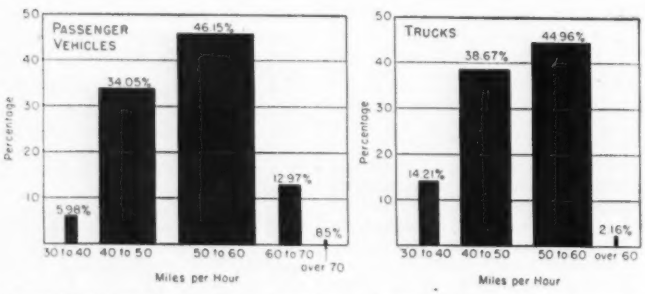
Charts presented at the conference by Gerald B. Gilbert, assistant to the chairman, supported the widespread impression that trucks on the turnpike, quite generally, operate near or above the old 60-mph limit for light commercial vehicles. Of the many vehicles checked by Mr. Gilbert with a radar speed-recording device, 45% of the trucks were travelling between 50 and 60 mph, and over two percent were travelling over 60 mph.

• **Speed-zone signals**—Under study by the commission is the use of speed-zone signals, to be installed at intervals of about two miles. They are to caution drivers when conditions ahead—such as fog or ice—require reductions in speed.

A few signals of a type now being considered have been installed on the turnpike near Harrisburg. Each unit consists of five lamps of a type now used by railroads at highway grade crossings. For test purposes the signals have been suspended from overhead bridges at points where power is available. If the system is adopted, some signals may need to be installed on standards in the median zone. They are hand-operated at present, but remote control is possible.

• **Wider passing zone**—On the recently opened section of the extension of the turnpike westward from near Pittsburgh to the Ohio line the turnpike commission is experimenting with a change in the position of the painted centerline. Normally, the commission paints that line just to the left of the longitudinal joint in the pavement. Optically, that has the effect of narrowing the passing lane slightly. On one test section the commission has painted the center line just to the right of the center joint, and on another it has painted the line 12 in. to the right. This has the effect of adding about 18 in. to the passing lane, thus giving drivers of passing vehicles in the slow lane more area in which to maneuver.

Motion pictures of this test section showed that most vehicles stayed within the narrowed slow lane.



SPEEDS OF VEHICLES on the Pennsylvania Turnpike. Checks were made with a recording radar speed-measuring device set up at various points on the highway, on up-grade, down-grade, level tangents and on curves.

This change was endorsed by both the drivers and operators as desirable for the whole turnpike. Representatives of the drivers recommended that on any further extensions of the turnpike the lane widths should be changed to 11 ft and 13 ft, or to whatever widths appeared most suitable, so that the white line could be painted right on the joint. Now there is a black line at the joint in addition to the white line.

• **Accident statistics**—For the first time in its 10-year history the commission made public at this meeting detailed studies of its accident record, which has been the subject of much adverse publicity in recent months.

At the opening session, Edward N. Jones, a member of the commission and chairman of the conference, discussed the accident record, centering his talk chiefly on the first seven months of this year. Opening of the eastern extension of the turnpike last November, he said, increased the length of highway in operation from 160 to 260 miles or 63.3%. Vehicles using the turnpike between Jan. 1 and July 31 of this year increase 66.5% over the same period last year. On this longer turnpike there were 297 more accidents, an increase of 70%, roughly the same as the increase in length. Drivers involved were less than one percent of the total number of users of the highway.

• **Not due to high speed**—Much study has been given to the accident record, Mr. Jones said, and as a result, "the conviction remains that the relatively high speeds permitted are not the cause of the majority of the 'mishaps' or fatal and non-fatal serious accidents on this superhighway."

Further details of the accident record were given by Mr. Gilbert who carried his analysis back to the first year of operation. Mr. Gilbert was even more emphatic in stating his conviction that a solution for the accident problem does not lie in reducing speeds on the turnpike, as many have proposed. In support of this conclusion he cited the year 1944—when gas was rationed and speeds restricted—as having produced the worst record in relation to traffic volume on the turnpike.

Comparing the turnpike record for 1949 with that of the entire country, Mr. Gilbert said the national record for all rural highways was 1,187 accidents per 100 million vehicle miles, whereas the turnpike record was only 156 accidents per 100 million.

Commercial vehicles are the worst offenders. During 1950, 5.5 commercial vehicles per 10,000 were involved in accidents as compared with 2.6 passenger cars. Three times as many

commercial vehicles as passenger cars were involved in fatal accidents.

• **Lower speeds favored**—No support for the commission's opposition to any further reduction in speeds on the turnpike developed in the discussion. Cutting passenger-car speeds to 60 mph and heavy-truck speeds to 45 mph was urged by W. Robert Smith, general manager of the Ward Trucking Corp. and chairman of the Pennsylvania Turnpike Safety Committee. These cuts were recommended by the committee in a recent report to the commission.

Mr. Smith said that the turnpike's real problem is accident severity, not accident frequency, to which the turnpike staff had given so much attention at the conference.

Enforcement of the present speed restrictions, he said, is wholly inadequate, due to lack of sufficient patrolmen. There are only 32 state police assigned to the 260-mile highway, of which 9 are on administrative work. Only 8 patrolmen are on the highway at any one time.

Other speakers stated that at least twice the present force was needed, and that just seeing more patrolmen on the turnpike would do much to cut down reckless driving.

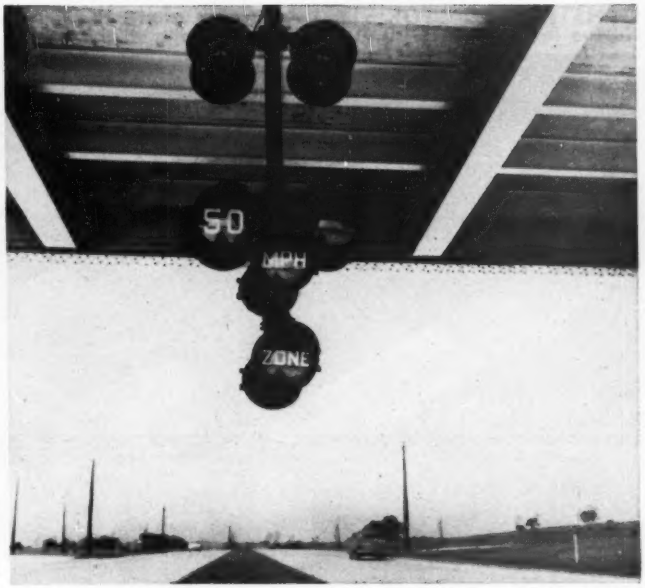
J. Maxwell Smith, president of the Keystone Automobile Club, endorsed this view, stating that the commission misses the fact the greater the speed the greater the certainty of death in an accident.

As the record shows that most drivers of passenger cars do not exceed 62 mph, Mr. Smith can see no reason why the commission should not cut the top speed from 70 to 60 mph, thus simplifying the patrolmen's job of rounding up the reckless drivers.

• **High cost of patrolling**—Replying to this criticism, Conference Chairman Jones said that it costs the commission about $10,000 a year for each patrolman. Mr. Jones said further that the commission is trying to develop better means for enforcing traffic regulations to avoid the time now lost by patrolmen in taking serious cases of violation to peace officers. One suggestion is to put such offenders off the turnpike at the nearest exit.

• **Drivers have their say**—Representatives of truck driver unions took an active part in discussions of speed and accidents. They favor a much more active educational program and stated that their organizations will support such a program.

Union men place most of the blame for truck accidents on the "gypsies" and on the small operators whose men are not members of the unions and so are not protected against exploitation. He singled out the steel haulers, especially the "certificate carriers" who hire individual truck operators. Often these operators must wait for hours at a steel plant for their load before starting on the turnpike, so they are tired when they start. Also, because a quick turn around is money in their pocket, these drivers do not take proper rest.



TRAFFIC CONTROL SIGNAL under study for Pennsylvania Turnpike. Normally the upper left light shows green and others are out. When passenger cars should reduce speed to 50 mph upper lights flash green and yellow alternately. For 30 mph, upper right light flashes yellow and 30 shows in right center lamps.

John M. Ey of the safety department of Continental Transportation Lines, Pittsburgh, doubted that the individual operators are as bad as pictured by the unions. He added that there could be much better enforcement if the unions would support the operators in their efforts to control their own drivers through the use of such things as speed recorders on trucks to determine who are the worst offenders.

Mr. Ey said that their drivers do not like to drive on the turnpike. They find it monotonous.

Edward Gogolin, general manager of the Pennsylvania Motor Truck Association, thanked the commission for making public its accident figures, especially the analysis of 1950 figures that indicates a high percentage of accidents (45%) among truck drivers in the 21-24-year age group. Availability of accident statistics on the turnpike, he said, will aid his association greatly in its accident prevention program.

• **Safety signs on trucks**—As part of the turnpike commission's new program it has designed large circular signs for the rear of trucks using the turnpike regularly. They are printed on a reflecting material. One says "You are too close—SLOW DOWN," and the other says "Licensed Carrier, Pennsylvania Turnpike Commission," with the carrier's number.

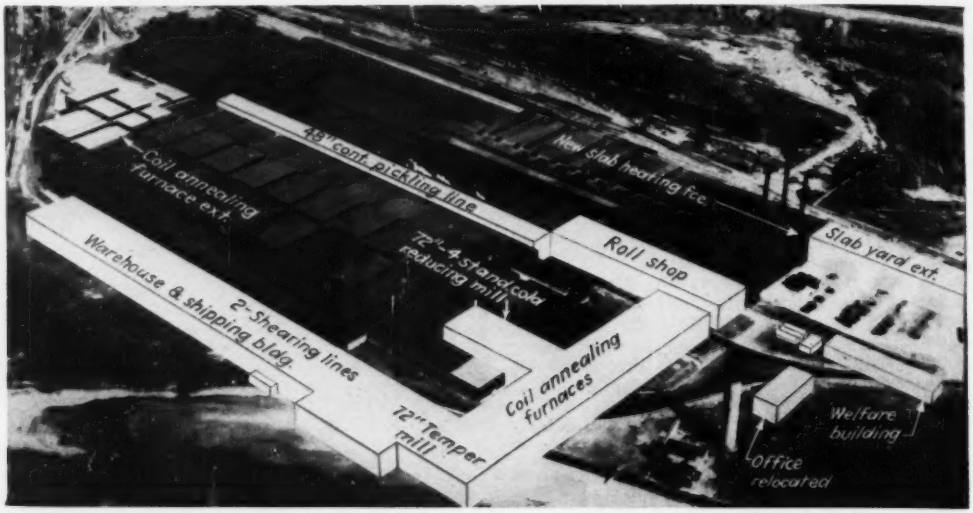
In discussing this part of the program, Mr. Jones said that the commission is considering relating reported traffic violations to the discount the commission now gives truckers who use its "Requisition Account System" of paying tolls. Less discount would be granted to operators whose drivers are frequent violators.

Maine voters approve two construction bond issues

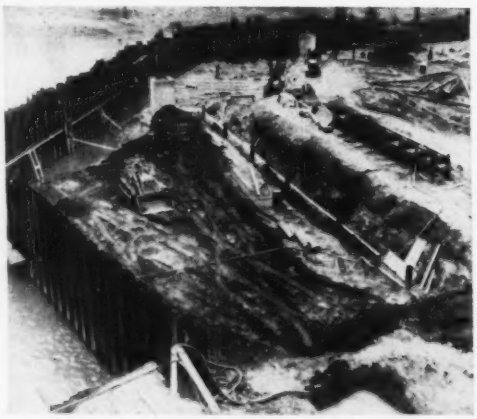
Maine voters, in a special referendum election, have approved two bond issues totaling $29.5 million. A $27 million highway bond issue will give the state $98 million for highway construction and repair when added to federal-aid and other state funds. A $2.5 million issue will be used to build a new Bangor-Brewer toll bridge.

In a light vote, the voters rejected a toll proposal for the Portland-South Portland Bridge.

CONSTRUCTION FOR STEEL: Winding along the Cuyahoga River, Republic Steel's plant



FARTHEST UPSTREAM, above navigation limits, is the hot and cold strip mill area. Existing buildings include 98-in. continuous hot strip mill. New finishing and shipping building blocks old river course, so river relocation was necessary.



RIVER RELOCATION was accomplished by dredging opposite bank, owned by Republic, and driving sheetpile bulkhead, to be tied back with rods to deadman walls.

ROOM FOR ANNEALING FURNACES was made by moving this three-story office building. With aid of flexible utility connections; entire move was made without disturbing personnel.

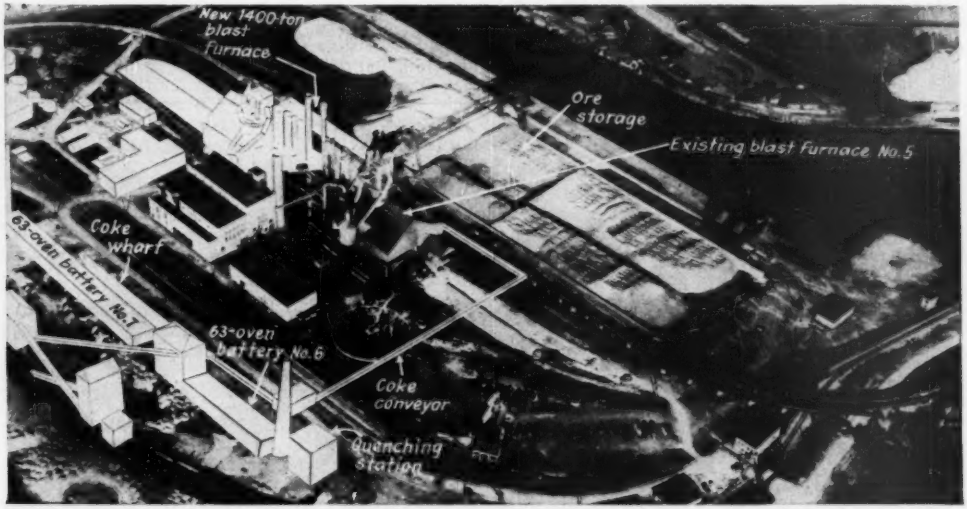
Major expansion stretches steel mill to limit

ADDING 672,000 tons of annual steel capacity to a mill that now makes more than 3¼-million tons and doing the new construction work without interfering with regular production are today's main problems of Republic Steel Co.'s Cleveland District engineers.

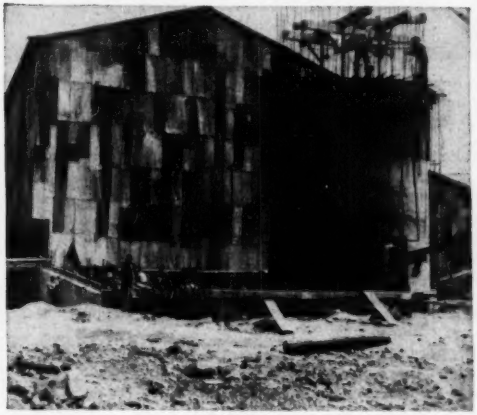
The new program, announced last November, now is in full swing and should pay off in more product early in 1952. Initiated with the aid of a short-term-write-off certificate (for tax purposes) the $75,000,000 program came close on the heels of a much simpler project that had added 180,000 tons to the plant's annual capacity (see third page).

The current program is making so much work for engineers and contractors, primarily because there isn't room to make the expansion comfortably. New buildings must be keyed in with old, roads and tracks must be relocated and, in one place, natural boundaries must be altered to gain more space.

in Cleveland is a jigsaw-puzzle for engineers who are adding 850,000 tons annual output.



NEXT DOWNSTREAM is the blast-furnace and coke oven area. Plant's sixth furnace will rest on drilled-in caissons. Conveyor from coke ovens makes rail movement unnecessary.



COKE OVEN construction requires complete weather protection at all times. Hence, the sheet metal shelter. At right: tapered concrete stack work.

UNDER SHELTER, bricklayers perform the exacting job of installing checker refractories for a coke oven. For uniform operational heat-up, brick must not get wet.

The natural boundary is the tortuous Cuyahoga River, which is being relocated to make room for expansion in the hot and cold strip area. This area lies at the upstream end of Republic's 500-acre property. Extending downstream 2¼ mi, the property includes two other principal areas—a blast-furnace and coke-oven area, and an open-hearth furnace area.

New work at the blast furnace area includes a 1,400-ton-per-day furnace, plus two 63-oven batteries for making coke. At the open-hearth area there are to be four new 275-ton furnaces and new soaking pits. In the hot and cold strip area, a new 72-in. cold reducing mill plus new heating, annealing and pickling facilities, are under construction.

These new works call for some strong foundations. The blast furnace construction stands on 25, 30-in. drilled-in. caissons going 150 ft and more to their rock sockets. Socket depths vary from 5 to 10 ft, and design loading is 850 tons per caisson.

To carry most of the remaining structures, 10-in. concrete-filled pipe piles have been driven. Total for the job is 14,000, averaging almost 100 ft in length. Minimum spacing generally is 3 ft both ways. Design loading is 70 tons.

Ground conditions at the site consist of a 20 to 25-ft deep zone of cohesionless washed-in materials—loose sands and silty sands with some organic content. Below this are four

principal deposits that are mostly clay. The first and third are fairly strong; the second and fourth are weak. In general, the third, at 85-120-ft depth zone, carries the piles. Bedrock is at a minimum 150-ft depth.

Construction speed being essential, the piledriving contractors brought nine rigs on the job. These have driven an average of 12 piles per 8-hr working day.

• **Concrete saves time**—As in so many other post-Korea industrial jobs, speed also was achieved in the design stage. A notable example, one with a World War II parallel, occurred in the blast furnace area design. Ore, coke and limestone bins for blast furnace stock had been designed for steel. But steel was short. Moreover, it would take time to detail the design. Steel had been short during the war and it had been necessary to redesign bins for blast furnace No. 5. Now, faced by the steel shortage and having the old detail drawings for concrete bins, Republic had little difficulty in deciding to use concrete—at a substantial saving in time.

Contractors, too, have lost little time as witnessed by the fact that most of them are ahead of a tight schedule that calls for spending of $75,000,000 between January 1951 and February 1952.

For Republic Steel Co., A. G. Delaney is manager of construction in the Cleveland District expansion.

Strengthening the structures was easier than expected

FARTHEST DOWNSTREAM is the open-hearth furnace area. Four new furnaces (right) will add to capacity only recently augmented by the structural changes described below. (Republic Steel photos)

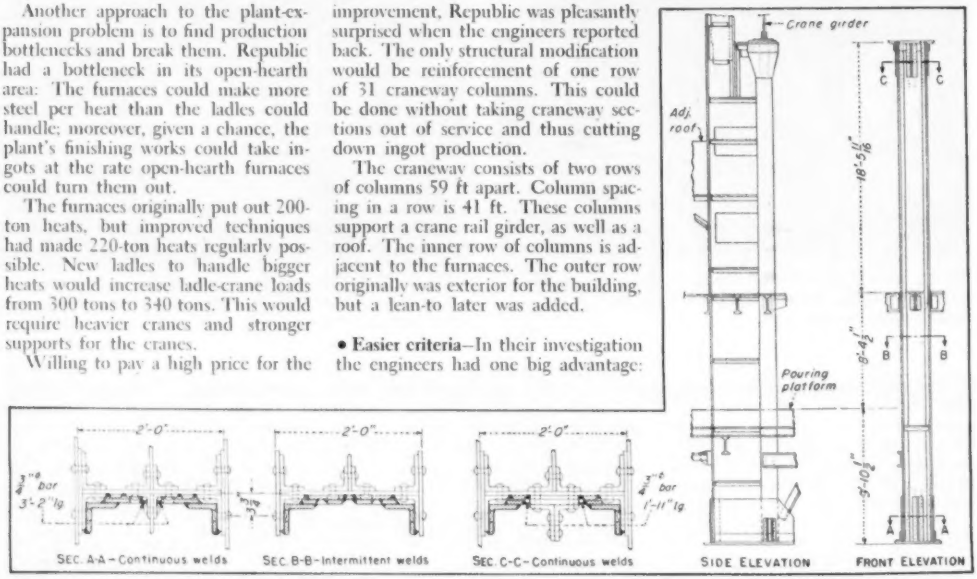
Another approach to the plant-expansion problem is to find production bottlenecks and break them. Republic had a bottleneck in its open-hearth area: The furnaces could make more steel per heat than the ladles could handle; moreover, given a chance, the plant's finishing works could take ingots at the rate open-hearth furnaces could turn them out.

The furnaces originally put out 200-ton heats, but improved techniques had made 220-ton heats regularly possible. New ladles to handle bigger heats would increase ladle-crane loads from 300 tons to 340 tons. This would require heavier cranes and stronger supports for the cranes.

Willing to pay a high price for the improvement, Republic was pleasantly surprised when the engineers reported back. The only structural modification would be reinforcement of one row of 31 craneway columns. This could be done without taking craneway sections out of service and thus cutting down ingot production.

The craneway consists of two rows of columns 59 ft apart. Column spacing in a row is 41 ft. These columns support a crane rail girder, as well as a roof. The inner row of columns is adjacent to the furnaces. The outer row originally was exterior for the building, but a lean-to later was added.

• **Easier criteria**—In their investigation the engineers had one big advantage:



BEEFING UP the existing open-hearth building involved increased section in only one row of craneway columns. Brackets to roof supports made it necessary to do all reinforcing on side facing steel-ladle area.

Original design had been based on 16,000 psi tensile-stress; basis of the new analysis was 20,000 psi. They also found other conservatisms in the original work.

Stress analysis of the girders showed that they would carry the new ladle and crane loads if the number of crane wheels was increased from four per corner (total 16) to five per corner; the wheelbase would be 33 ft 8 in. instead of 28 ft 10 in., therefore the load distribution would be more favorable.

Under existing conditions, the inner column row was stressed within limits. The crane-wheel change would keep stresses allowable.

The outer column row was another matter. The lean-to roof had overstressed it; already, the maximum computed stress was 25,000 psi compression, with 16,300 psi allowable. The new load, with wheels rearranged, would introduce 26,500 psi.

Reinforcement necessary to bring maximum compressive stress below 16,310 psi (allowable for compression or basis of 20,000 psi tensile stress) is shown. This work now is complete, while crane alterations proceed, one crane at a time, on a temporary craneway extension outside the building. In addition to wheel rearrangement, work on the cranes includes new girders and revised mechanical equipment for handling the greater load.

In charge of the investigation and craneway alterations for Republic was Leonard Larson, chief engineer for Republic's Cleveland District.

Construction for steel—This is the fifth of a series of articles on construction problems incidental to American steel-expansion program—Editors.

Notes on legal decisions

Summaries of decisions relating to construction work prepared by I. Vernon Werbin, counselor at law and engineer, New York, author of Legal Phases of Construction Contracts (McGraw-Hill Book Co.)

Right to recover cost of doing extra work

The court in an opinion discussing the right of a contractor to recover the extra cost of doing work made the following comments:[1] "The ultimate guide in determining whether or not there can be a recovery for the extra cost of doing work under a contract is the contract itself. It is always a question of the intention of the parties, and it is this fact which gives rise to the difficulty of reconciling some of the cases. No two contracts are exactly alike, and a difference in the language may make inapplicable a decision under some other contract. It may be said, however, that if there are positive representations in a contract as to the conditions, character, or nature of the work amounting substantially to a warranty, there may be a recovery based upon such representations;[2] and this may be true even though the contractor was required to make investigations and satisfy himself upon these matters.

"On the other hand, the representations may be such that it was clearly the intention of the parties that the contractor should rely upon his own investigations and examinations, and in such cases he cannot recover upon the representations.[3] There may be representations and still the contractor will be denied a recovery because his bid was a gross bid for the entire work.[4] A recovery may be had where the representations made are fraudulent even though the contractor is required by the contract to make independent investigations,[5] but by far the greater bulk of the cases upon this subject falls under the head of work or material furnished outside of the contract. A recovery may be had in this line of cases where the work was to be carried to bedrock, for instance, and the contractor was made to carry it below that point;[6] where there was an erroneous direction of an engineer which required extra work;[7] where there were unauthorized changes in plans which required extra work;[8] and generally where the contractor was required to do work which did not come within the scope of that called for by the contract.[9]"

"Where the necessity for extra work results from the acts, errors and mistakes of the architect or engineer of the owner, under whose supervision the work is to be done, the loss should fall on the owner, and the builder may recover additional compensation, and this rule applies if the extra work is outside the original contract, although it provides that the contractor will not charge for extra labor. Additional compensation may be recovered for extra work which becomes necessary because the building cannot be constructed according to the plans and specifications furnished, as required by the contract, such as for alterations rendered necessary by defective plans; or for additional work or expense which is rendered necessary by the owner's negligence, or failure to perform his part by the contract.[9]"

A contractor was allowed to recover the cost of replacing certain work where the work as originally done was performed in accordance with the instructions of the inspector on the job and the contractor had objected to the way he had been instructed to do the work claiming that the method followed would not be satisfactory, and it turned out that the way the contractor wanted to do the work originally was right.[11]

A contractor is entitled to recover the increased cost of the work resulting from errors in the plans,[12] or by reason of erroneous locations of the work made by the engineer.[13]

(1) Kuhs v Flower City Tissue Mills Co., 171 N. Y. S. 688, 104 Misc. 243.
(2) Hollerbach v United States, 233 U. S. 165, 34 Sup. Ct. 533, 58 L. Ed. 898. United States v Stage Co., 199 U. S. 414, 26 Sup. Ct. 69, 50 L. Ed. 251.
(3) Leary v City of Watervliet, 222 N. Y. 337, 118 N. E. 489. Sullivan v President, etc., of Sing Sing, 122 N. Y. 389, 25 N. E. 366.
(4) Lentilhon v City of New York, 102 App. Div. 548, 92 N. Y. S. 837.
(5) Christie v United States, 237 U. S. 234, 35 Sup. Ct. 565, 59 L. Ed. 933.
(6) Faber v City of New York, 222 N. Y. 255, 118 N. E. 609.
(7) Borough Construction Co. v City of New York, 200 N. Y. 149, 93 N. E. 480. Messenger v City of Buffalo, 21 N. Y. 196. McCann v City of Albany, 11 App. Div. 378, 42 N. Y. S. 94. Gearty v Mayor, etc., 171 N. Y. 61, 63 N. E. 804.
(8) Dwyer v Mayor, etc., 77 App. Div. 224, 79 N. Y. S. 17.
(9) Horgan v Mayor, etc., 160 N. Y. 516, 55 N. E. 204.
(10) 17 Corpus Secundum Juris Secundum 845-846.
(11) McIntyre v United States, 52 Ct. Cl. 503.
(12) Clemente Contracting Co. v State, 89 N. Y. S. 2d 453.
(13) Wyandotte & D. R. Ry. v King Bridge Co., 160 Fed. 197. Wheeling v John F. Casey Co., 74 F. 2d 794.

Damage from blasting and pile driving

Blasting may cause damage to adjoining property by casting rock on the property of an adjoining owner or by concussion. Where the damage is caused by the casting of rock or other substances upon the property, the owner is entitled to recover for the damages sustained, regardless of the intent or negligence of the party doing the work. Such damage results from an unlawful trespass upon the adjoining property.

Where the damage results from concussion, there can be no recovery for the damages sustained unless it can be shown that the work was done in a careless and negligent manner. One cannot confine the vibration of the earth or air within inclosed limits, and hence it follows that if the work that is done is lawful and the concussion is rightfully caused, its extension to its ultimate and natural limits

(*Continued on page 44*)

CONCRETE PIERS, 40 FT LONG, support a 4-story, 54-year-old brick building in San Francisco while excavations are made for a new 14-story structure alongside. Bracing the piers are log shores that butt against footings poured for the new work. All of the shores were later trussed with heavy timbers to provide greater stability.

Deep underpinning formed in wells

THE FOUNDATION WALL for a 54-year-old brick building in San Francisco is being supported by 40-ft-long reinforced concrete piers while construction is underway on adjoining multi-story buildings. The piers were formed and poured in wells dug in the sandy formation before the hillside material was excavated. Jacks were used to transfer the weight of the wall from the old footings to the new concrete columns.

The deep concrete piers will remain in place as long as the old building is needed.

The work is part of a $20,000,000 construction program now under way at the University of California medical center in San Francisco. Besides other facilities, this program includes the 14-story Medical Sciences Building and a 15-story hospital. These two structures are joined near a corner of the old Dental Pharmacy Building constructed in 1897. The deep concrete piers support one foundation wall of this latter building while the two new buildings are built.

Actually, the existing brick structure will be torn down as part of a future step of the hospital development. However, university officials could not do without the use of the old structure while the new facilities are being built, so it had to be protected.

• **Piers first**—Piers to support the exposed foundations of the old building were formed up in wells dug into the sandy formation. They are 4x5 ft in plan and are supported on 7x8 ft footings poured monolithically with the piers.

Only two piers were built at one time and these were separated by at least two pier sites (for example, the first and fourth pier). In this way, only two sets of forms and loading jacks were needed.

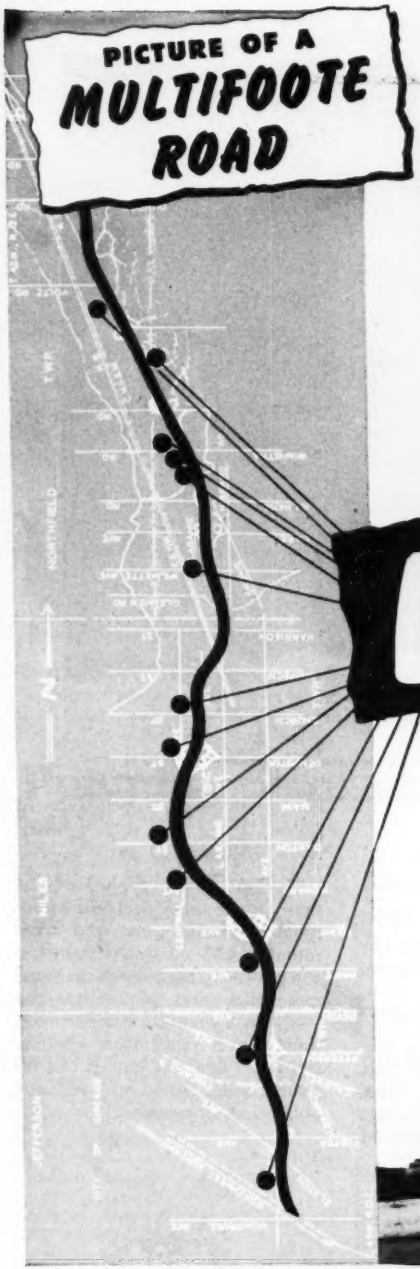
Each pier was concreted to within 3 in. of the underside of the old footing. After the concrete developed sufficient strength, two hydraulic jacks were inserted in pockets at the top of the pier and the foundation load was transferred to the pier by jacking. A load of 90 tons was imposed on each pier. Exact amount was calibrated by deflection of a steel member of the jack loading device.

The space between the top of the pier and the foundation was dry packed with stiff mortar and later the jacks were removed. When this work had been completed, the outside half of each pier was extended some 6 ft above the bottom of the old foundation wall to serve as a buttress against outward thrust.

Then, as the hillside material was excavated, lagging was installed between the piers (piers are not more than 6 ft apart or 10 ft center-to-center). As the excavation proceeded further, heavy log shoring, at least 12-in. dia, braced the piers with one end of the shoring butting on footings for the new buildings that had already been poured. As excavation proceeded still further, additional log shoring was installed lower down and heavy timber (3x10 in.) trussing built between parallel shores.

The log bracing will be removed after the new structure rises to such a point that compacted backfill can be placed between the old and new buildings.

H. L. Marchand, consulting engineer, designed the support system for Clinton Construction Co., general contractors for the new buildings. Huber & Knapik are structural engineers on both new buildings. Masten & Hurd and T. L. Pflueger are the architects concerned.



OF the 19 pavers on Edens Superhighway, 13 are MultiFootes!

EDENS HIGHWAY stretches north out of Chicago and will eventually be the main artery to Milwaukee and will be one of the most modern of America's Freeways.

The most northerly operation is that of the Contracting and Materials Co. of Chicago who purchased a Blaw-Knox package including Blaw-Knox Forms, Spreader, Finisher and MultiFoote Duomix Paver for their section of this job.

On the contracts that you have coming up this spring and summer you want dependability—ability to keep a running—freedom from down time.

Thirteen out of 19 is quite a percentage. Add this to the world records recently established by MultiFoote 34-E Singlemix and Duomix pavers on the Turnpike. Performance is the best testimonial for any equipment. Plan on a MultiFoote.

THE FOOTE COMPANY, INC.
1922 State Street
Subsidiary of Blaw-Knox Co.
Nunda, N. Y.

13 MULTIFOOTE PAVERS ON EDENS SUPERHIGHWAY

Investigate the Blaw-Knox Package

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Reproduced from maps of Cook County Highway Dept.

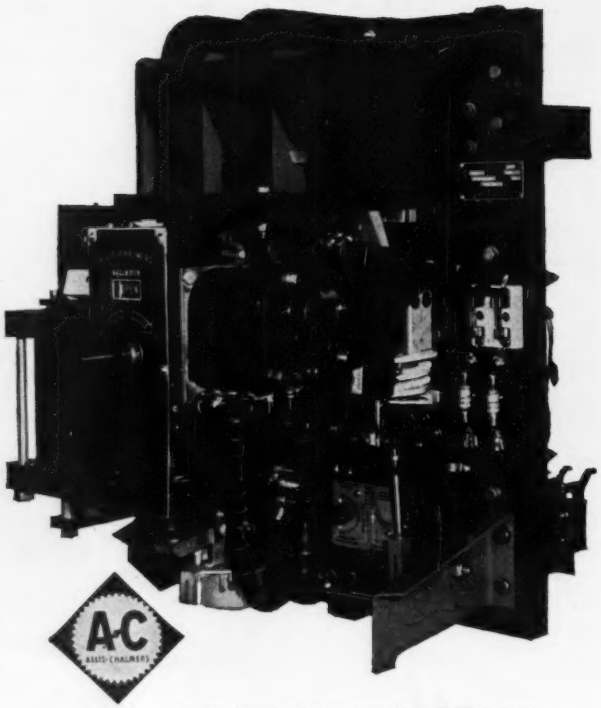
MULTIFOOTE PAVER

FOR EVERY PLACE CONCRETE MUST BE POURED

TOUGH DUTY FOR A MOUNTING PANEL

...why Allis-Chalmers mounts this G-25 Breaker on

K&M EBONIZED ASBESTOS



Allis-Chalmers electrically operated type G-25 air circuit breaker; 600 V., 600 A., 25,000 A-I-C. Breaker components mounted on panel of K&M Ebonized Asbestos.

A 600 Amp. circuit breaker is heavy machinery—it has to be for dependable operation. To mount their popular G-25 Breaker, Allis-Chalmers uses K&M Ebonized Asbestos. Here are the reasons:

THE HIGH MECHANICAL STRENGTH of K&M Ebonized Asbestos withstands the structural forces of heavy breaker operations—helps assure that components will *stay put* through the busiest duty cycles.

EXCEPTIONAL DIELECTRIC STRENGTH effectively insulates operating components. And K&M Ebonized is completely non-magnetic—is not affected by electrical stresses.

RELATIVELY LIGHT IN WEIGHT, K&M Ebonized Asbestos can be handled easily; makes a mounting panel that is extremely strong without being unnecessarily heavy or bulky.

EASY TO CUT AND TO DRILL, Ebonized Asbestos saves fabrication time and costs; will not chip or fracture while being cut or drilled.

APPEARANCE THAT HELPS SELL! K&M Ebonized Asbestos is furnished with a smooth-sanded finish, lacquered with deep-black switchboard lacquer. This attractive, durable surface adds a sales "plus" to any unit!

Allis-Chalmers is typical of the many progressive electrical equipment manufacturers who have found K&M Ebonized Asbestos the answer to their needs for panel mountings, test tables, bus bar supports, switchgear compartment linings, and many other applications. To find out how it can fill your needs, write us—without obligation, of course.

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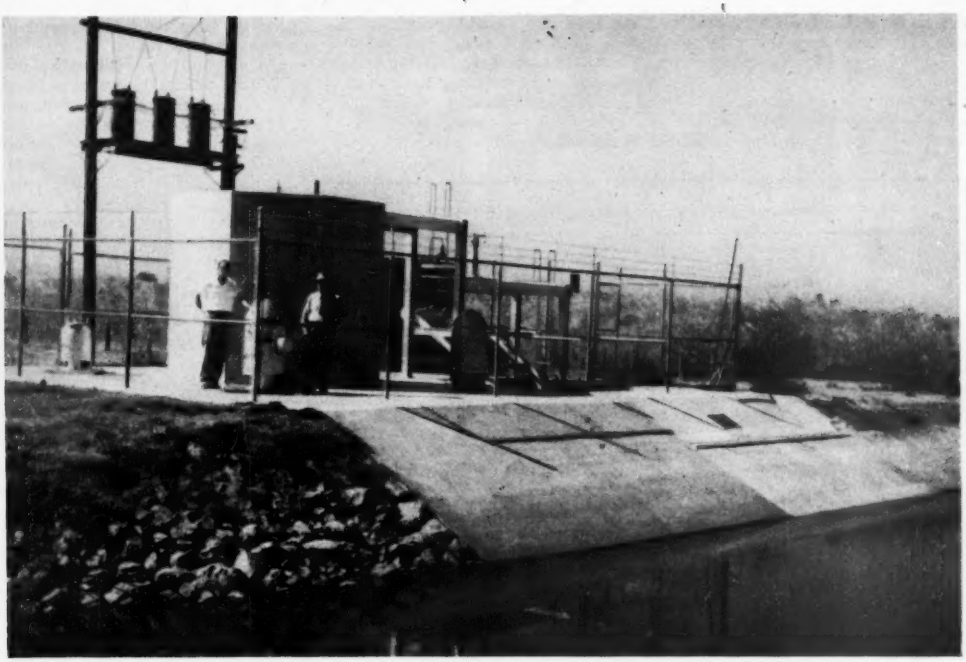


OUTDOOR PUMPING PLANT automatically takes a constant proportion of flow in the Wutchumna ditch (foreground). Irrigation district officials stand in front of the outlet tower. Intake screen at right. Water is delivered for transport to the Friant-Kern Canal behind the embankment in the background.

Pumping plant is mechanical brain

A. C. Bardin
Civil Engineer
Leeds, Hill and Jewett,
Consulting Engineers
Los Angeles, Calif.

A PUMPING PLANT that solves two different problems automatically without an operator in attendance has recently been built by the Lindsay-Strathmore Irrigation District in California.

First, the plant takes just one-quarter of the flow from an irrigation ditch. That proportion is the diversion entitlement of the district and must be held to very closely—no more and no less. This is accomplished by means of a weir crest that rises and falls in proportion to the height of the water in the ditch.

Second, as long as there is water in the ditch, the four pumps must operate in such combinations as to handle flows ranging from 2 to 60 cfs. To do this with a minimum sump capacity and without excessive switching the pumps must operate continuously under steady conditions for any given inflow.

Operating to assure these required conditions are a discharge line resistance that varies inversely with flow and two sets of electrodes that rise and fall with the flow. One set of electrodes acts to increase pumping capacity and the other to decrease it.

• **Saves 19-mile pipeline**—The new pumping plant takes water from the Wutchumna Irrigation Ditch and lifts it from 4 to 8 ft into the Friant-Kern Canal (a unit of the U. S. Bureau of Reclamation's Central Valley project). Besides getting one-fourth the water flowing in the Wutchumna canal, the Lindsay-Strathmore district gets Central Valley project water from the Friant-Kern Canal (the district also has other sources). But the Wutchumna canal is 19 miles away from the district. By pumping the water into the Friant-Kern Canal the district now gets highly economical transmission of its water. The new plant has permitted the abandonment of the old 19-mile transmission system, badly in need of repair.

The water is delivered by the government canal to the regular diver-

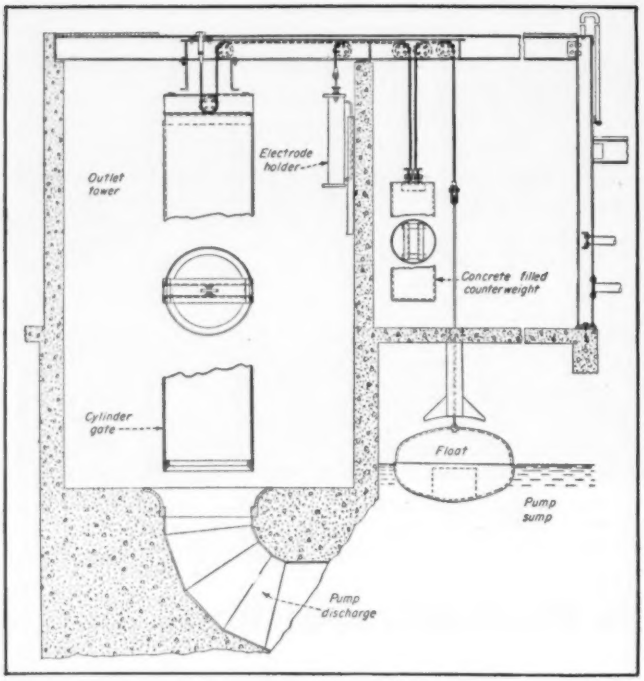
PUMP OPERATING COMBINATIONS

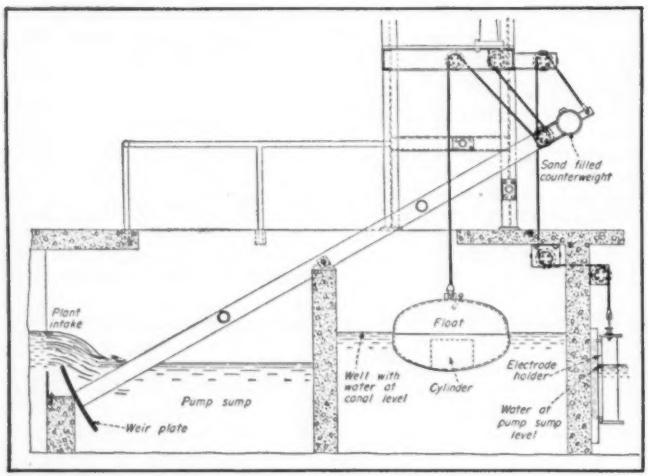
Sequence Position	Pumps				Flow (cfs)	
	15 hp	30 hp	40 hp	50 hp	Increasing	Decreasing
1						
2	on				2-7	6-2
3		on			7-15	13-6
4			on		15-22	19-13
5		on	on		22-36	28-19
6		on		on	36-41	36-28
7			on	on	41-48	41-36
8		on	on	on	48-60	60-41

sion works at Lindsay where the district gets Friant-Kern water as well.

Normal operation of a plant satisfying the conditions imposed here would require operators working on a 24-hour basis. Thus, the automatic features of the new unit, by eliminating need for round-the-clock operators, much more than offset two increased costs, namely: (1) the added first cost of the necessary controls and (2) the extra operating cost for the increased power caused by artificial discharge head necessary for automatic operation. (See box for statement of operating cost savings).

The plant includes four vertical impeller type pumps, one with a 14-in. discharge and three with a 20-in. discharge. These are powered by electric motors rated at 15 hp, 30 hp, 40 hp and 50 hp. Result is nominal pump capacities of 2,500 gpm, 5,000 gpm, 9,000 gpm and 12,000 gpm, respectively. These pumps are operated in various combinations to handle the 2- to 60-cfs flow.





TWO FLOAT CONTROLLED SYSTEMS regulate inflow into the plant and amount of pumping. Electrodes on each systems rise and fall to minimize switching. Angles of cables and sheaves are selected to assure correct inflow proportion. Cylinder gate puts added head in pump discharge for better operating characteristics.

• **Float controlled weir**—Rise and fall of the 10-ft-wide proportioning weir crest is controlled by a 4-ft-dia steel float, roughly ellipsoidal in section. The float rides in a well within the plant where the water surface is at the same elevation as water in the Wutchumna ditch. Cables and sheaves are rigged from the float to the movable weir to permit the proper amount of the ditch's flow to enter the plant pump sump.

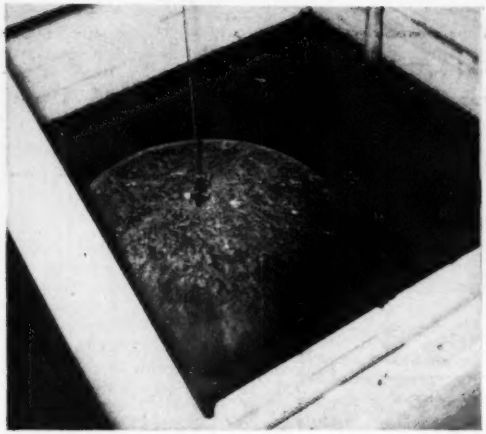
The weir moves about 1.8 ft as the ditch water surface increases 3.6 ft. In other words, when the ditch water surface is at minimum height (El 417.34), the weir crest is at the same elevation. As flow in the ditch increases, the weir crest rises, but only about half as fast. Exact angles of cables and sheaves are based on ditch backwater curves. This serves to restrict flow over the weir to correct proportion.

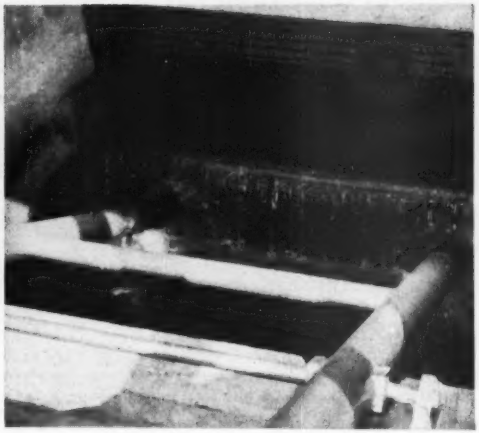
• **Pump discharge resistance**—Head-discharge characteristics of the propellor-type pumps normally would make operation of the plant on a continuous, non-switching basis somewhat difficult. To assure smooth operation, a 36-in.-dia cylinder gate is placed in the outlet tower over the discharge pipe. The cylinder gate is operated to place an artificial head loss in the discharge line. This enables any combination of pumps that are switched on to find their proper place on the head-discharge curve and pump just the quantity of water coming to them. (See Table).

A float in the pump sump controls the opening of the cylinder gate. The gate opens 1.42 ft as the sump surface elevation increases 2.84 ft. At this high elevation, the pumps would be handling 60 cfs, the maximum plant capacity. So at this point the cylinder gate opening remains constant.

Three sets of switching electrodes are also installed to assure smooth —uninterrupted operation. One set of electrodes in the pump sump is stationary and acts to shut the plant down when no water enters it.

A second set in the pump sump switches pumps to larger combina-





FLOAT (LEFT) AND PROPORTIONING WEIR (RIGHT) are so connected by cables and sheaves that pumping plant takes correct part of canal flow. Float rides in a well where the water surface is the same as the canal.

tions as flow to the plant increases. At the time of switching, the cylinder gate in the outlet tower is substantially fully open and the water in the sump is rising. This indicates that the pump combination is too small even with no artificial resistance on the discharge. This set of electrodes rises as the proportioning weir rises and permits higher operating levels in the sump during larger flows.

Still a third set of electrodes is located in the outlet tower. These act to switch the pumps to smaller combinations as the inflow decreases. At the time these electrodes make contact, the cylinder gate is in the down position creating a maximum head loss. Further, the difference in water level between the pump sump and the outlet tower is at a maximum. This third set of electrodes rises directly with the rise in pump sump level and switch when the water head on the pumps reaches 12 ft (10.5 ft for the 15-hp unit that operates only for low flows and then it runs alone).

An overlap of off and on electrodes prevents "hunting" and the excessive switching that might result.

George W. Trauger is resident engineer and superintendent of the Lindsay-Strathmore Irrigation District. The plant was designed and construction was supervised by Leeds, Hills and Jewett, consulting engineers, Los Angeles, Calif., under the direction of Raymond A. Hill. The author assisted in the design and was resident engineer on construction.

Bent Construction Co., Los Angeles, built the plant under a $32,000 contract, exclusive of pumps, motors and switchboard, which were purchased under separate contract and installed by Bent Construction Co.

HOW THE PLANT HAS WORKED

To show that this plant is an operating reality and actually reduces costs, this statement was obtained from Geo. W. Trauger, superintendent and resident engineer for the Lindsay-Strathmore Irrigation District. Trauger is a veteran San Joaquin Valley irrigationist, having served the district for 36 years.

"We are now using the station for the second year. It has worked perfectly in every detail—from a low of 2 cfs to a maximum of 60 cfs. It eliminated the use of two men and is only visited once a day to read the water meters which the U. S. Bureau of Reclamation requires. Otherwise a visit once a week would be all that it would require.

"Before this station was built, it cost about $2.50 per acre-ft to deliver water to Lindsay. Now the cost is 11 cents per acre-ft for power plus 10 cents per acre-ft to the U. S. Bureau of Reclamation for carrying charges for a total of 21 cents."

Porous-type asphalt lets trees grow

A new porous asphalt for use over tree roots is finding experimental use in a new tree-shaded parking area being built by the Rhode Island department of public works for the city of Providence.

"Any tree growing in a city surrounded by pavement has two strikes on it," concedes Philip S. Mancini, department director. "But we think we have the answer. We have an asphalt mix that will allow 80 per cent of the rainfall to percolate into the ground over the whole surface of the islands.

"We feel the trees will thrive and people can walk to and from their cars on pavement instead of through gravel or constantly over grass. Grass wouldn't last a week under that kind of foot traffic."

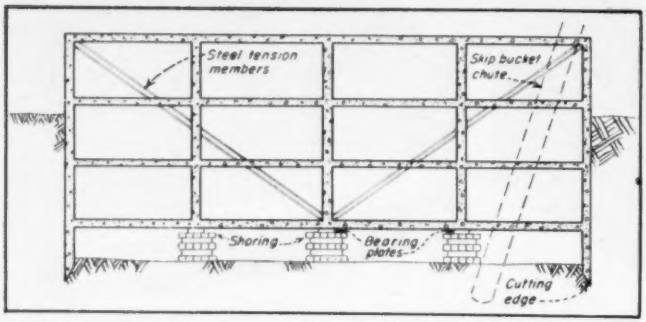
One reason for the development was Providence Traffic Engineer Dwight T. Myers' requirement that Pershing Square, the parking area, accommodate as many cars as possible. To that end the traffic islands are being utilized as access ways.

Design Engineer Frederick W. Hauck directed tests at the state laboratory to obtain a suitable mix. Asphalt in the binder course was cut down to a point finally where 500 cc of water went through a five-inch ring of the mixture in 8½ seconds. The mixture has greater voids than ordinary binder but is expected to stand up over the years.

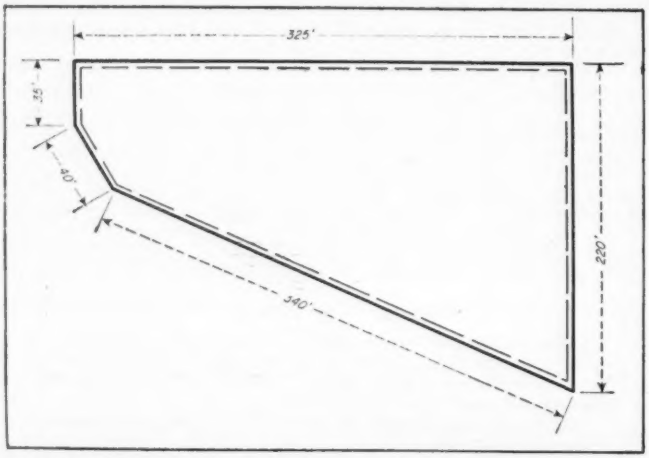
Of the test, Hauck says: "That percolation is equivalent to a rainfall of nearly 15 inches—a flood."

Answering botanists who have doubted success of the experiment, Hauck says "spaces three or four feet around trees won't give enough water to keep a tree healthy. We are going to feed those trees at the fingerling ends of the roots, an area roughly corresponding to the crown of the trees. Water getting in around the trunk alone would never be adequate."

Building foundation sunk into place



CAISSON forms the substructure of a Tokyo building, saving erection time.



FOUNDATION covers more than an acre; therefore, a big caisson was required.

LABORERS shovel earth from under caisson, which rests on shores temporarily.

IN CONSTRUCTING one of Japan's largest postwar buildings—the $4,000,000 Nikkatsu International—in downtown Tokyo, the contractor is employing an old engineering process so effectively as to command a great deal of attention from architects and engineers abroad. He poured the entire concrete substructure as a unit above ground, enclosing more than an acre, and then sank it into place in the same manner as a caisson.

While the sinking process is under way, the contractor is erecting the superstructure, thus saving weeks of construction time.

As is the case with most buildings in Japan, the Nikkatsu International is constructed of heavily reinforced concrete. It will be nine stories high. In plan, it is roughly trapezoidal in shape, the irregularity adding to the difficulties of controlling the level of the caisson during the sinking process.

The substructure incorporates four basements, with an overall depth of about 60 ft. It weighs 25,000 tons. Provided with beveled cutting edges, the caisson sinks under its own weight as earth is removed from under it.

All excavation is done with pick and shovel. Loaded into pushcarts, the spoil is dumped into skip buckets, which carry it to the surface to be hauled away in trucks.

To ease the lateral thrust on the cutting edges of the caisson, particularly at corners, earth is removed from the wall areas first, then from the central areas.

With 300 workers excavating around the clock, the structure sinks an average of 3 in. per day.

At all times, precautions are taken to insure level sinking. Elevations are constantly checked by means of an electrically lighted board, which shows the relative elevations of various points about the perimeter of the caisson. Rate of sinking is controlled by shores placed under the columns of the second basement, the columns being omitted from the bottom basement. These lower columns are inserted after the caisson is in its final position. Last step is pouring of a raft foundation.

Advantages of this method appear to be: (1) It eliminates the need for driving sheet piles and (2) it speeds the job.

The method has been patented by Takenaka Koumoten, who has built several smaller buildings on the same principle since 1938. As is the general practice in Japan, all the architectural and engineering work for this building is done within the organization of the contractor, The Takenaka Construction Co.

Information for this article was supplied by T. E. Davis, now on active duty with the U. S. Navy.

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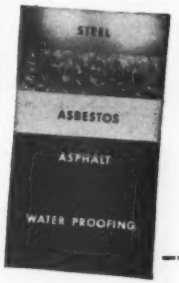

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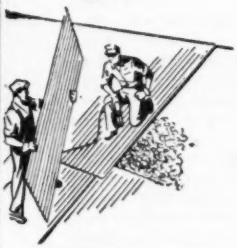
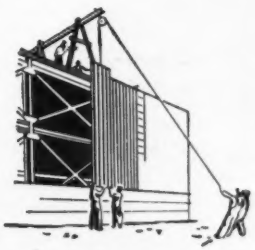
TOP-SPEED FASTENING

The Top-Speed Fastening method is done entirely from the outside. It eliminates interior hanging scaffolds. Consequently, this enables a workman to place, safely, twice as much material in the same time as with the old method.



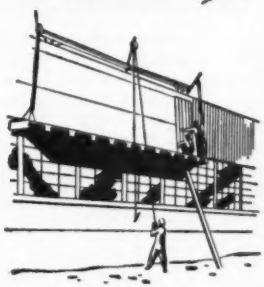
TOP-SPEED INSULATION

Top-Speed Insulation is a Robertson method of applying insulation entirely from the outside. It halves the construction time.



Q-PANELS

Famous Robertson Q-Panels can be surfaced with Galbestos. A Galbestos metal Q-Panel is factory-fabricated; steel inside, insulation and Galbestos outside. Available 2′ wide, in lengths up to 12′, lightweight, only 3¼″ thick, but superior in insulation value to a 12″ masonry wall with furred plaster. A small crew can erect a Q-Panel fast—50 sq. ft. in nine minutes.



Q-PANELS (G-type)

Q-Panels (G-type), are factory engineered but field assembled. Interior steel, then insulation, then Galbestos metal. They are extremely successful for economical, yet attractive industrial and commercial structures, where insulation is a requirement. You get a tight, maintenance-free wall, lightweight, thin, durable and good-looking.

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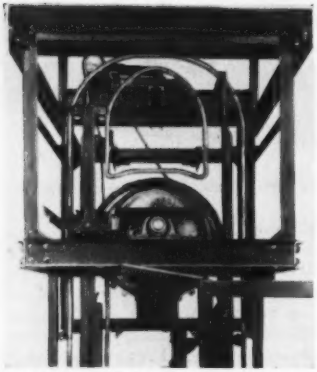
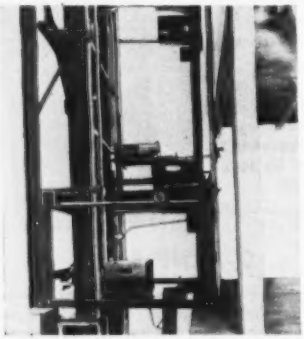
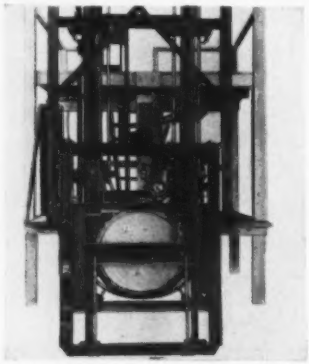
How to plan for vertical conveyors



HEAD SPROCKET and drive section of vertical conveyor is placed at top of shaft.



AT DISPATCH STATION, loaded tray (center) waits to be picked up by upward-moving empty carrier, will let occupied carrier (bottom) pass.



FOOT SPROCKET and take-up unit is installed in a pit at bottom of shaft.

THE PROBLEM of interfloor communication in multistory commercial and public buildings and hospitals is being successfully solved in several new buildings by a mechanical messenger service.

This involves installation of one or more vertical conveyors, which can circulate as much as 200 lb of paperwork and lightweight supplies per minute. The effect on building design is about equivalent to that caused by passenger elevators.

• **Money and time saved**—A good example of the economy of mechanization is furnished by the experience of the Mutual Life Insurance Co. After installing a 13-story vertical conveyor in its new headquarters building in New York City, Mutual Life was able to make a 33% cut in personnel, while it speeded up circulation of a heavy volume of paperwork. Net annual saving can be written in five figures, according to Mutual Life's office planners.

The new 525 William Penn Place Building in Pittsburgh, Pa., has a 32-story vertical conveyor for transporting interoffice correspondence. Figures are not yet available on the savings realized with this installation.

Both the Mutual Life and William Penn Place buildings are examples of single-shaft systems. In contrast, the home office of the John Hancock Mutual Life Insurance Co. in Boston is served by four vertical conveyors, which carry two tons of paperwork daily. Only 14 min. is required to clear 1,500 lb of incoming mail. Three conveyors are in the new 25-story addition and one in the old building. Trays carrying interoffice correspondence are switched from these vertical systems by an electric eye to a horizontal conveyor for transport between buildings.

Made of plastic, conveyor trays are designed to nest inside each other for compact storage when not in use. They are generally 16½ in. long and 12 in. wide at the top, slightly smaller at the bottom. Depth is 10 in. Maximum capacity is 22 to 25 lb of bulk paper and light supplies.

• **Like an elevator**—In a typical conveyor installation, a continuous roller chain is driven by an electric motor (only 3 hp for a 13-story building). Engaging sprockets at top and bottom, the chain extends the height of the building. Carriers spaced at 9-ft intervals along it transport trays from floor to floor at a speed of about 72 fpm.

Vertical conveyors are enclosed in shafts like passenger elevators. The only visual evidence of the existence of a machine from a worker's area is the 18-in. wall cutouts for receiving and dispatching trays at each floor. Short gravity-control conveyor sections lead from the conveyor receiving station into the work area.

In case of fire, fusible links will let vertical sliding doors snap down over the openings, sealing off the vertical conveyor shaft at each floor.

• **Dial your floor**—Operating the conveyor is easy. When the trays are loaded, the attendant sets the floor selector dial or presses a floor button located at the upper right of the dispatch cutout. As the trays are placed on the loading station, they are automatically moved into the path of the traveling carriers. Each tray rides up and around the top sprocket and is automatically discharged on the downward trip at the pre-selected floor. It takes only 4½ min. for a 26-story delivery of interoffice correspondence.

• **Installing a conveyor**—Best place for conveyors generally is a central location, adjacent to other vertical shafts. A central location insures a minimum of horizontal run in collecting and distributing correspondence at each floor level. The Mutual Life Building in New York, for example, runs a vertical conveyor parallel and adjacent to one of its stair wells. This provides easy access to the rear maintenance platform of the conveyor for servicing the equipment.

Loads exerted by conveyors on building structures are negligible. The steel frame of a building supports the conveyors. In one 13-story installation, loads range from 2,500 to 5,000 lb, the load being applied at the top of a unit.

Vertical conveyors are shipped in sections about 10 ft long and are assembled in the shaft. Principal components are (1) the head sprocket and drive unit, (2) foot sprocket and take-up units and (3) intermediate sections consisting of braced steel shapes and tubular track guides. Mechanical parts are installed in (1) and (2) after they have been placed in the building shaft. Hence, it is common practice

for builders to leave one or more walls of the shaft open until the conveyor has been installed.

The take-up section, which is equipped with tension springs and take-up screws for adjustment of the chain, is installed in a pit in the floor. At top-floor level, a removable floor plate in the slab provides access to the drive machinery.

• **Behind the scenes**—Timing and accuracy are prime features of the vertical-conveyor system. A feeler arm below a loading station determines whether an approaching carrier is empty or bears a tray. If the carrier is empty, the arm will draw a mail box into the path of the first empty conveyor carrier, which will take it to the dial-selected station. The feeler arm remains inert if the carrier is loaded, the mail box remaining at the station while the loaded carrier passes by.

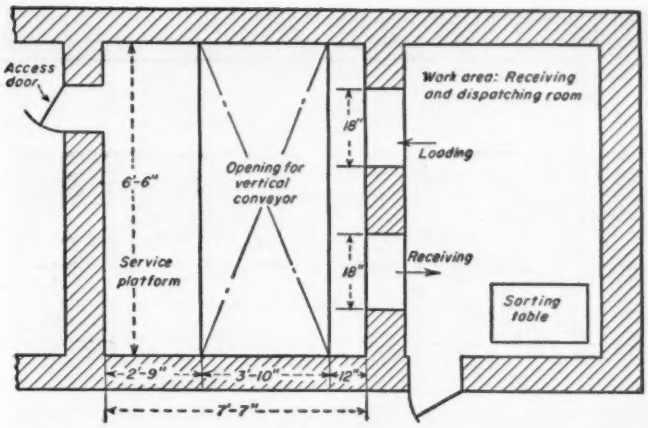
In automatically discharging loads at a pre-selected floor, the mechanical movement is the reverse of the loading operation.

For normal operation, runout conveyors at receiving points are designed to receive four trays. If a runout conveyor at a particular floor is loaded to capacity and a tray approaches set for discharge, safety switches lock the unloading mechanism. The carrier then by-passes this floor and discharges at a central distribution station, where the tray is dispatched again.

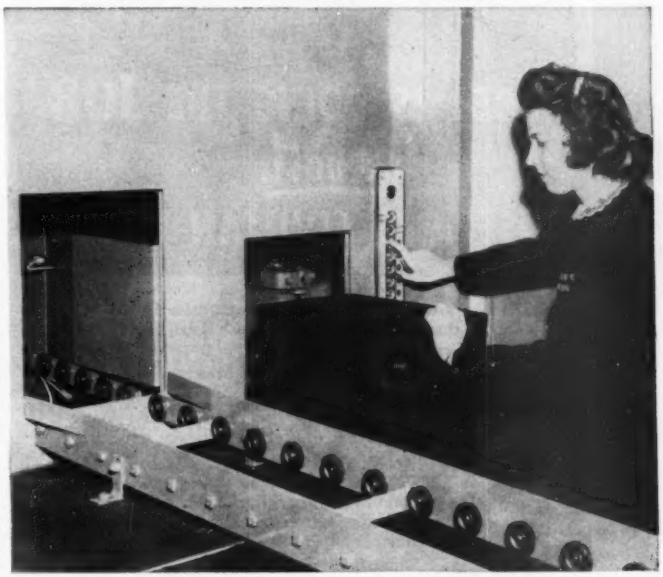
• **For existing buildings**—Conveyors may be installed in existing buildings, as well as in new construction. For an existing building, holes may be cut in the floors, the conveyor installed and walls erected to form an enclosing shaft. Such an installation was made for the 5-story free clinic of the International Ladies Garment Worker's Union in New York.

• **Conveyors vs pneumatic tubes**—In choosing between vertical conveyors or pneumatic-tube installations, the designer's first consideration is the number of floors to be served. An arterial system of pneumatic tubes would probable satisfy the requirements of a predominantly horizontal building, whereas a vertical conveyor generally would be more advantageous in a tall building.

The amount of paperwork to be distributed is a second consideration. For advertising concerns, mail-order houses, publishing companies, insurance firms, and industrial corporations requiring interoffice distribution of large quantities of paperwork, about eight tons of paperwork can be circulated daily by conveyors with a minimum of cost, effort and time. The exact tonnage to be moved of course depends on the number of conveyors installed and height of run.



PLAN VIEW of a typical vertical-conveyor installation. On either side of the shaft, space must be provided for sorting mail and servicing equipment.



PLASTIC TRAY loaded with interoffice correspondence is dispatched to another floor merely by pushing a button. A dial may be used instead of buttons.

In considering the desirability of a vertical conveyor in hospitals, designers will find prompt and automatic delivery of supplies is the chief concern, rather than volume. Hartford Hospital, in Cincinnati, has both a pneumatic-tube and vertical conveyor installation. Administrators consider the conveyor indispensable for transporting intravenous solutions, specimens, bulky books and correspondence in a matter of minutes where and when the materials are needed.

Quiet operation of vertical conveyors make them of particular value to hospitals and institutions where noise control is essential. However, the conveyor enclosure can be lined with acoustic material if greater noise control is necessary.

This article is based on information supplied by the Lamson Corp. of Syracuse, N. Y., and the Standard Conveyor Co. of North St. Paul, Minn.

(Continued from page 33)

cannot be unlawful and the consequential injury resulting therefrom is remediless.[3]

The law exacts a duty to exercise a certain degree of care from a person who undertakes to do on his own premises even a lawful act that may produce injury to his neighbor's property, the degree to be measured by the danger involved, and the damage that might be done. One who blasts on his own premises must do so with the most cautious regards for his neighbor's rights. If it is practicable to remove the rock without blasting, although at a somewhat increased cost, he would be bound to do so, especially where he had notice that doing the work by blasting was damaging his neighbor's property.

Where it was shown that the rock could have been loosened by the use of iron bars, a jury would be justified in concluding that the failure to use such method to remove the rock constituted negligence. So, too, if less powerful blasts might have been used, which, if used, would not have occasioned the injury, or would have lessened it, the omission to use them might well be considered as negligence.[3]

As to liability for damages resulting from pile driving, the same rules as previously set forth for liability for damages resulting from blasting apply. A contractor will be held liable for the damages resulting to an adjoining building where it can be shown that the work could have been done without damage to adjacent buildings by the use of less power, with little or no vibration, even though the work would have been more slowly performed.[3]

In another case,[4] where the court found the contractor responsible for the damage done because piling and sheeting work was negligently done, the court recognized that vibrations set up by a pile driver falls within the same rule as explosives. If the work is accomplished with care, no recovery may be had.

(1) Whitemore v Fago, 93 N. Y. S. 2d 672 and cases there cited.
(2) Booth v Rome, W. & O. T. R. Co., 140 N. Y. 267.
(3) Whitemore v Fago, 93 N. Y. S. 2d 672.
(4) Petillo et al. v Kennedy & Smith et al., 263 App. Div. 821, 31 N. Y. S. 2d 481, cited with approval in Whitemore v Fago, 93 N. Y. S. 2d 672, 684.

250 more housing units planned near arsenal

Housing Authority of Huntsville, Ala. plans construction of an additional 250 urban low-rent housing units. Work is now in progress on a 350-unit project to cost about $4 million.

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READER COMMENT

AWWA acts on award

Sir: The general policy committee of the American Water Works Association has been considering for some time a variety of problems associated with awards conferred by the association and by its sections. One of the awards included in the study was the John M. Goodell Prize which, for a number of years has been very graciously supported by ENGINEERING NEWS-RECORD as a tribute to a former member of its staff.

At the meeting of the board held during our 1951 convention in Miami, the general policy committee recommended, and the board accepted the recommendation, that the John M. Goodell Prize be continued as a major association award. The board voted that this award, in common with all other association awards, be supported by monies from the general funds of the association.

The board further directed the general policy committee to continue intensively its study of association awards at all levels both general and within the various Sections, and in any event to review every award at five year intervals.

When the John M. Goodell Prize award was presented to Prof. McIlroy at the Miami Convention this year, it represented the twentieth presentation. John M. Goodell rendered the AWWA very fine service during the earlier years of its publication of the JOURNAL. It is doubtful that anyone who had not had the broad editorial experience possessed by him could have carried the JOURNAL through those early years.

The board wishes to express its great appreciation to the ENGINEERING NEWS-RECORD for the support of the award during the years it has been presented.

HARRY E. JORDAN,
Sec'y American Water Works Assn.
New York, N. Y.

"Duckbill" spillways

Sir: In its drainage and erosion control activities, the Soil Conservation Service of the U. S. Department of Agriculture has been using for many years the "duckbill" type of spillway described in ENR June 28, p 30, although as a single unit rather than in multiple units. Among the advantages of this spillway are: the long crest length permits large flows to pass over the structure with a relatively low head; the low head permits the use of much lower and less costly dikes to direct the flow to the spillway; there is less flooding of valuable agricultural land during storm periods; and the width of the outlet can be adjusted to the width of the exit channel, yet the crest length can be as long as is required.

Because of its importance, a detailed hydraulic study of the box inlet drop spillway, as it is called, was undertaken to determine and evaluate the performance of this structure. This study has recently been completed and is reported in Technical Papers No. 7 and No. 8, Series B, of the St. Anthony Falls Hydraulic Laboratory, entitled "Capacity of Box Inlet Drop Spillways" and "Hydraulic Design of the Box Inlet Drop Spillway", respectively.

These studies have shown that the flow over the spillways is not as simple as might be supposed. Such things as the shape of the box inlet, the width and depth of the approach channel, the proximity of the dikes to the crest, and presumably the spacing of multiple box inlet units greatly affect the discharge capacity. All must be considered when designing this type of structure.

Valid reasons for considering the U-shaped type of spillway are presented, both in the article and editorially (p 21). However, a word of caution is in order. The multiple units will quite likely not have the capacity of an isolated single unit multiplied by the number of units employed, and the flow over the crest and through the units may be somewhat different than the designer anticipates. Until more is known regarding the hydraulic properties of this type of spillway, it seems advisable, as was done in the case of the Marguerite Spillway for "Le Barrage de L'Oued Sarno", to check the design by means of models.

FRED W. BLAISDELL
Soil Conservation Service
St. Anthony Falls Hydraulic Lab
Minneapolis, Minn.

Addition

Sir: Your staff man covered the Clark Hill reservoir story very well and the article was a good one but, unfortunately, he failed to mention our name in the article. Our firm conceived the idea of raising the bridge under traffic and prepared all the design details for the Georgia State Highway Department.

JOSEF C. PATCHEN
Patchen and Zimmerman
Augusta, Ga.

SPARLING

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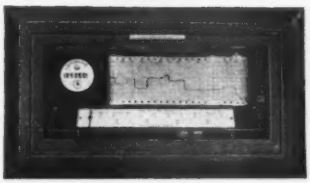

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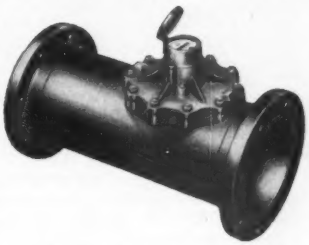

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FOREIGN

Nile Valley reclamation project negotiations under way again

After a lull of some fifteen years, negotiations toward the conclusion of a final agreement on the perennial regularization of the Nile River from its source to its outlet in the Mediterrancan recently have been resumed between the Egyptian and the Ethiopian governments.

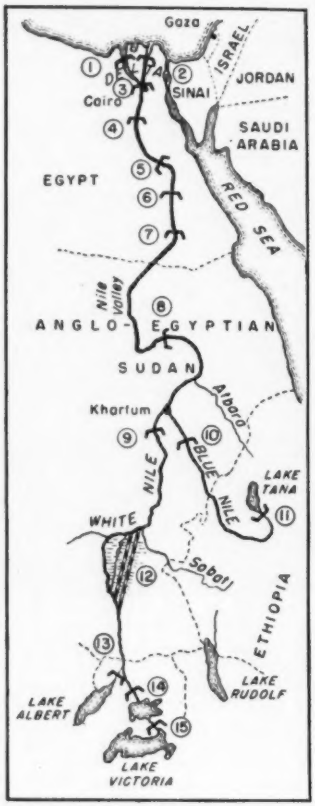
Each year, from July on, most of the 17,000,000 inhabitants of Egypt begin to worry about the amount of rain which will fall in such far-away lands as Ethiopia and Uganda. If the rains are heavy, dams in Egypt may be broken, or bridges torn away, as happened, for instance, during the 1946 flood. Conversely, if there is not enough rain in the East African highlands, drought and suffering will be the lot of many an Egyptian farmer, whose crop is entirely dependent on irrigation by water from the Nile.

• **What is already done**—Systematic work for the taming of the Nile Valley started at the beginning of the present century with the building of the Aswan, Asyut, Delta and Zifta dams in Egypt.

This was followed by a second phase, after the first World War, when a large-scale program, aimed at increasing the volume of water available for irrigation, was adopted by the Egyptian government. Among other works, the Delta Dam, now known as the Mohamed Ali Dam, was reconstructed and completed in 1940 in order to assure permanent irrigation of the Nile Delta area. The Aswan Dam was raised twice, increasing the capacity of the reservoir from 2½ billion to 5 billion cubic meters. The Asyut Dam was reinforced, and smaller works, such as the Nag Hammadi Dam, completed in 1930, were added to the scheme. These works permitted reclamation of half a million acres of first-class grain and cotton lands.

A drainage project with 24 electric pumping stations is also included in this phase of the program, not fully completed. By 1953, it is estimated that some 420,000 acres will have been reclaimed in the delta of the Nile alone.

In the Anglo-Egyptian Sudan, too, water control projects have been built. The Sudanese are largely nomadic, and depend less on the Nile. The largest dam on the Sudanese stretch of the Nile is the 3,200,000 cubic meter capacity Djebel Awliji Dam, north of Khartum, built in 1937.



• **What is to be done**—Negotiations with Ethiopia, which controls the source of the Blue Nile, having now started again, the ultimate phase of the program may soon reach the stage of the bulldozer and steam shovel. There will be new dams in the Sudan, Ethiopia and British Africa, extensive drainage works in the Sudds area of the Sudan, where half the White Nile water is now lost by evaporation.

The last phase of the program is to include the following elements:

(1) A dam on Lake Tana in Ethiopia, now under study, intended to use the lake as a stabilizing reservoir for the protection of the Sudan and Egypt against floods by the control of the Blue Nile waters coming from Ethiopia. This project is the one now under discussion with Ethiopia.

The 3,100-square kilometer lake would be transformed into a ten billion cubic meter reservoir by the construction of a relatively low dam. Such a reservoir would guarantee for all time a minimum of one billion cubic meters of water for the Sudan, and an equal quantity for Egypt, through the Aswan Dam. Increasing the height of Lake Tana, however, will flood certain Ethiopian lands, but the project would help Ethiopia in that it would allow greater irrigation of the valleys around the lake. Moreover, the Tis Esat Falls, below the lake, could be used as a source of power.

(2) Two dams in British Africa, one on Lake Victoria, the other on Lake Albert. The connected reservoirs created by these two dams will permit regulation of the whole flow of the White Nile. The level of Lake Victoria would be raised by some 1.4 meters, and the new dam would permit the distribution of electricity for Uganda. Similarly, Lake Albert, transformed into a reservoir, would furnish electricity to Uganda by a plant to be built on Owen Falls.

An older project, the Kioga Lake dam, was recently abandoned as being too expensive for the quantity of water that could have been gathered.

(3) A net of drainage canals in the Sudds area of the Sudan in order to save the waters now being lost there by evaporation.

(4) Two new dams in the Sudan, the Sennar Dam and the Meroe Dam. Each will have capacity of 8 billion cubic meters.

(5) A new, 4,000,000-cubic meter capacity dam in Egypt, and Edfina Dam in the Eastern Nile Delta. Building of this dam started last year.

After completion of these works, the flow of the Nile at Aswan, it is estimated, will be of slightly less than 34 billion cubic meters, which is above the needs of Egypt and the Sudan.

Summary

In Egypt:

(1) Edfina Dam. Started 1950. Will have a capacity of 4,000,000 cu. meters.

(2) Zifta Dam. Built 1903. Height 4 met., cost 305,000 English pounds.

(3) Mohamed Ali Dam (former Delta dam) completed 1940, replaced the El Kairiya Dam. Cost: 2,880,000 English pounds.

(4) Asyut Dam. Built 1902. Cost: 1,250,000 Eg.lbs. Irrigates 1,000,000 feddans (1 feddan = about one acre).

(5) Fuad 1st Dam. Cost: 3,705,000 Eg.lbs. Built to irrigate ½ million feddans.

(*Continued on page 48*)

3 new structures for the United Nations

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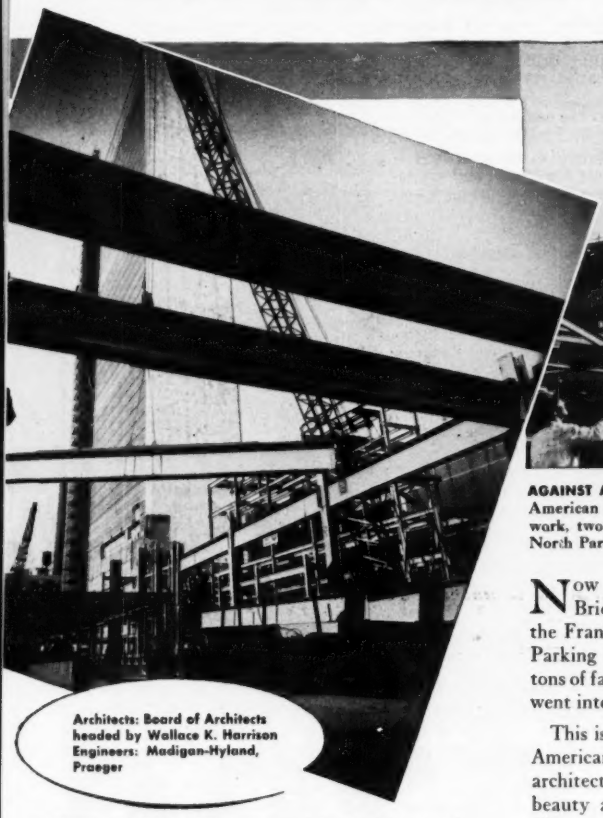

Architects: Board of Architects headed by Wallace K. Harrison
Engineers: Madigan-Hyland, Praeger

AMERICAN BRIDGE BEGINS erection of the steel framework for the cover of the Franklin D. Roosevelt Drive at the UN Headquarters. Eventually the entire drive from 42nd St. to 48th St. at East River will be covered. In the right foreground steel framework for the Meeting Halls Building can be seen. When completed, this building will extend, by cantilever construction, over the drive to the edge of the river.

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Now that the U N Secretariat Building is completed, American Bridge is erecting the Meeting Halls Building and cover for the Franklin D. Roosevelt Drive, General Assembly Hall and North Parking Space. When finished these structures will contain 18,600 tons of fabricated steel framework, in addition to the 13,800 tons which went into the Secretariat Building.

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

AMERICAN BRIDGE

UNITED STATES STEEL

Foreign . . .

(6) Esna Dam. Built 1908 at a cost of three million Eg.lbs after reinforcing. Irrigates Keneh-Esna area.

(7) Aswan Dam. Built 1902, raised twice. Capacity: 5,300,000,000 cub. met. Total cost will be nine million Eg.lbs.

In the Sudan:

(8) Meroe Dam. Under study. Will cost about 23 million Eg.lb. Capacity: 8,000,000,000 cub.met.

(9) Djebel Awlija Dam. Built 1937. Cost: 2,500,000 Eg.lbs. Capacity: 3,200,000 cu. met.

(10) Sennar Dam. Under study. Will cost about 23 million Eg.lbs. Capacity: 8,000,000,000 cu.met.

In Ethiopia:

(11) Lake Tana Dam. Under study. Its cost will be about 2,500,000 Eg.lbs.

In the Sudan (drainage canals):

(12) Dongola canals. Under study. Will cost about 4,000,000 Eg.lbs. To recuperate the waters now lost in the Sudds area.

In British East Central Africa:

(13) Lake Albert Dam. Under study.

(14) Kioga Dam. Old project, now abandoned.

(15) Lake Victoria Dam. Under study. Will serve, in conjunction with Albert, as a permanent reservoir for the regulation of waters of the White Nile.

Foreign Briefs

• **Chili's road budget**—The Chilean highway budget for 1951 totals about $47,000,000, an increase of $18,500,000 or 66 percent over 1950. Included in the budget is about $3,000,000 received from private sources for construction of specific projects, such as farm-to-market and access roads, nearly double the amount contributed by individuals and private groups in 1950.

Greater revenue for highways was obtained principally through a new law raising taxes on gasoline and lubricants and assigning all funds obtained from those sources to the highway budget.

Meantime, the national government encouraged private investment in farm-to-market and access roads by matching all such funds two for one and permitting a tax deduction for private contributors.

• **A Lebanese problem**—Porous limestone which causes streams to vanish and gush up again in great springs may be a problem in any plant to construct hydroelectric projects in Lebanon, according to R. F. Herdman, Reclamation Bureau engineer, who was one of 10 technicians recently sent to Lebanon by the United States government to study resource development possibilities.

Next step, undertaken if development is pushed under the Point 4 program, would be preconstruction work, including drilling to test rock foundations.

• **Latin American sanitation**—Appointment of Dr. Wilton L. Halverson of California to head a special joint survey to evaluate the health and sanitation programs of 17 Central and South American countries has been announced by Dr. Leonard A. Scheele, Surgeon General of the Public Health Service, Federal Security Agency, and Kenneth R. Iverson, President of the Institute of Inter-American Affairs. Dr. Halverson has been given a six-months leave of absence as Director of Public Health of the California State Health Department to head the survey, which is being carried on under the supervision of the Public Health Service. The purpose of the survey is to appraise the influence of the IIAA's nine-year health and sanitation program on the development of local health organizations, the rate at which the programs and methods are being incorporated into the permanent health structure, and the extent to which the health habits of the people are being influenced.

• **Vacuum concrete conference**—Spurred by the French licensee of the American vacuum concrete process, the first international congress on the applications of the method has just been held in Paris. Some 40 delegates from 14 countries attended, and as many as 300 persons were present at some of the sessions. They heard—and saw movies of—vacuum concrete being used for shaft lining in gold mines (South Africa); curved slabs for culvert lining, and penstocks for hydro plants (Italy); water tanks (Belgium); hollow beams for buildings (Egypt); electric light poles and slabs for lining large power canals (France). I. Leviant, managing director, Societe du Vacuum Concrete, was in charge of the meeting, which was attended by the American inventor of the process, Karl P. Billner of Philadelphia.

• **Pakistan water and sewers**—Harland Bartholomew & Associates, of St. Louis, Mo., have made an agreement with the State Department to provide assistance to Pakistan in the solution of water supply, sewage disposal and related problems in the city of Karachi. This is to be done as part of the Point 4 program. Karachi has tripled in population in three years and its municipal problems have increased in proportion. Horner & Shifrin, consulting civil engineers, St. Louis, will assist in the Pakistan project. C. V. Hill and V. C. Lischer, representatives of the two firms have already left for Pakistan.

• **Tisza River Dam**—A dam which is being built across the River Tisza, at Tiszalok, in the north of Hungary will make possible the navigation of the Tisza and its tributary the Bodrog as far as the northern frontiers. A canal more than 59 miles long to the Berettyo River is also to be constructed for irrigating 280,000 acres of the arid Hortobagy plain. A lock taking vessels of up to 1,000 tons forms part of the scheme. The head of water will be used to generate 55,000,000 kw a year, or twice as much as the present output of electricity generated by water power in Hungary. The project is to be completed by the summer of 1954.

• **Ecuador water resources**—W. H. Farmer of the Bureau of Reclamation has gone to Ecuador for six months to assist the Ministry of Public Works in studying the possibilities and need for a thorough investigation of developing the water resources for irrigation purposes in an area now critically dry for more than half the year.

• **Mexican railways**—The Export-Import Bank of Washington has announced the granting of two credits to contribute a stimulus toward the rehabilitation of the railways of Mexico. The credits are in favor of Nacional Financiera, S.A., and form a part of an earmarked fund of $150,000,000 authorized by the bank on Aug. 31, 1950. The first of the two is for $51,000,000, to be devoted to the improvement of the National Railways of Mexico, all of the amount to be for materials, equipment and services to be purchased in the United States. The second credit, in the amount of $5,000,000, is to be used in the rehabilitation program of the Ferrocarril Mexicano. While the present total of the two credits is $56,000,000, it is expected that it may be necessary to increase this amount, as further surveys of the needs of the railways' lines are completed.

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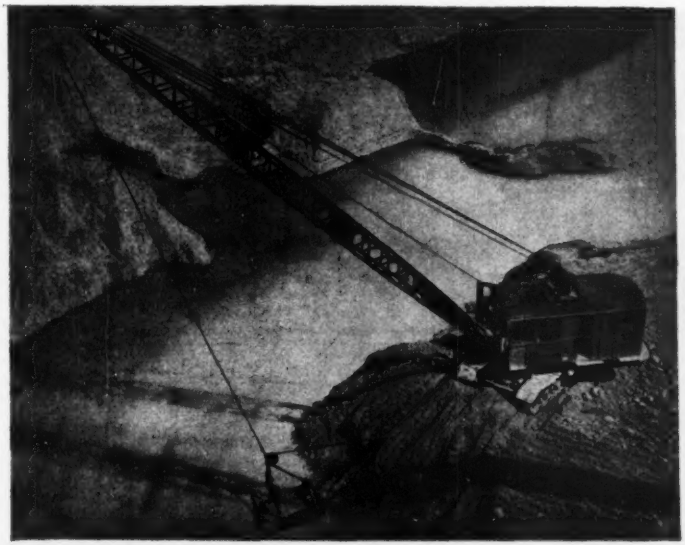

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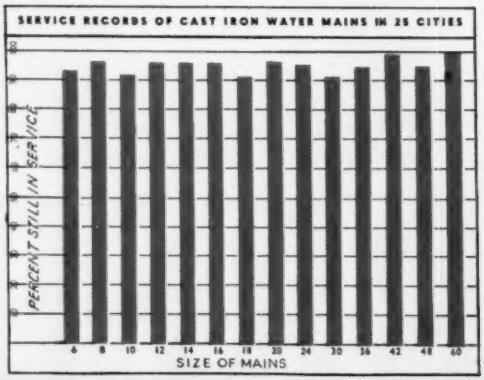
• Black dots represent original cast iron mains in service
★ Red stars represent cast iron mains in service 100 years or more

AMERICA PROVES IT! The above map shows cities having some or all of their *original* cast iron water or gas mains still in service. The red stars indicate 34 cities having cast iron water or gas mains in service that were laid a century or more ago.

SURVEYS PROVE IT! A recent study directed by 3 Water Works Associations shows that 96% of all cast iron water mains, 6-inch and over, *ever laid* in 25 representative cities, are still in service.


SERVICE RECORDS OF CAST IRON WATER MAINS IN 25 CITIES
PERCENT STILL IN SERVICE
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SIZE OF MAINS

CAST IRON PIPE

of CAST IRON PIPE...

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America proves it! Original cast iron mains are still serving 57 of America's largest cities. And 34 cities have either cast iron water or gas mains in service that were laid over 100 years ago (see map).

Surveys prove it! An exhaustive study, directed by a Joint Committee representing 3 Water Works Associations, shows that 96% of all cast iron water mains, 6-inch and over, *ever laid* in 25 representative cities, are still in service (see chart).

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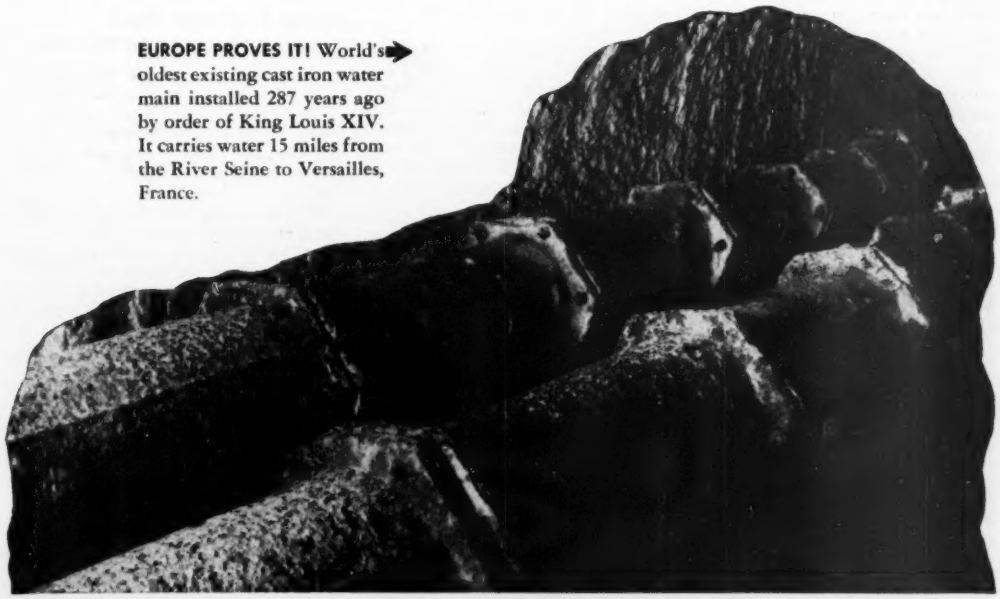
EUROPE PROVES IT! World's oldest existing cast iron water main installed 287 years ago by order of King Louis XIV. It carries water 15 miles from the River Seine to Versailles, France.



CAST IRON PIPE RESEARCH ASSOCIATION; THOS. F. WOLFE, MANAGING DIRECTOR, 122 SO. MICHIGAN AVE., CHICAGO 3.

SERVES FOR CENTURIES

MUNICIPAL

City officials seek procurement aid

At a recent meeting of city and town officials called in Washington by NPA's Office of Civilian Requirements it was brought out that such municipal officers are now worried because they believe that not sufficient allowances of steel, copper and aluminum are being made them for such very necessary items as fire engines, police cars, garbage trucks, among many other things.

It was also demonstrated that vital services and facilities are suffering, and that at the same time they are handicapped by local purchasing regulations requiring competitive bidding.

The municipal representatives were addressed by Director Lewis A. Weiss. He said that the interchange of ideas, and the discussion of problems and complaints would help a lot, and he said that these are now "under advisement."

It is thought that there is some possibility that a local government advisory committee may result from this meeting, as this is desired by President Truman as well as by hundreds of local municipal officials in all parts of the country, who are in urgent need of assistance in the solution of their present problems concerning procurement.

Baltimore road construction to be pay-as-you-go

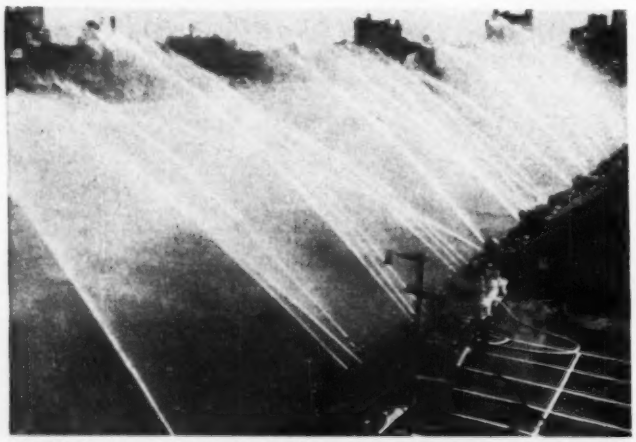
All Baltimore, Md., street and highway construction will be put on a pay-as-you-go basis starting in 1952, and a very large sum may be set aside for a start on access roads to the proposed harbor tunnel.

Paul L. Holland, director of public works, has submitted a $5,900,000 pay-as-you-go improvement program for 1952 including $2,500,000 for through highways.

In the past, big highway projects were financed by bond issue, but Baltimore's master transportation plan now calls for the city to pay as it goes on a $200,000,000 long-range highway program.

Mr. Holland said that all or a part of the requested $2,500,000 could be set aside for the inner harbor access roads.

He noted that the city eventually will need $10,000,000 to $12,000,000 to pay for the superhighways leading to the tunnel which some day will link Canton and Locust Point. State and federal money, he said, will be used for the cost of construction of the tunnel.



FIRE WALL of water is thrown up by barrage of fire hose streams at Rochester, N. Y., in firemen's drill during mock Atomic Bomb attack. Firemen and equipment from ten counties joined forces with other civil defense personnel in a test that employed about 100 high-pressure streams of water to knock down an imaginary wall of fire. (Wide World photo)

Award $5-million contract for waterworks project

The city of Warren, Ohio, has awarded a $5.2 million contract to Bass Engineering & Construction Co., of Birmingham, Michigan, for construction of a water project under which the domestic water supply will be taken from Mosquito Creek reservoir, instead of from the badly-contaminated Mahoning River.

Bids for the project, largest in the city's history, were opened March 23, but the company agreed to hold the bid open until August 7, when the contract was awarded.

To finance the work, the city sold $5,450,000 in first mortgage revenue bonds and water rates were increased 25 to 30%, effective October 1st, 1951.

Nearly $500,000 has been spent by the city water department in preparing for the new domestic water supply, including construction of new distribution mains.

Several years ago, the federal government approved a contract with the city for supplying the water from the reservoir.

Army Engineers help drought-stricken community

When the reservoir at Carthage, N. C., became drought-stricken recently, town officials began hauling water in from nearby Southern Pines and when this failed to meet the crisis they called on Army engineers to help out.

Men and equipment of the 433rd Engineer water supply company, which was in the area to take part in the Army-Air Force maneuver, "Exercise Southern Pine," responded and on Aug. 12 had water purifiers in operation pumping pure water into the town's water mains at the rate of 100 gpm.

The Army's portable pumping and purifying equipment was set up and in operation in less than 48 hours and with its estimated daily production of 60,000 gal. should be able to stem the crisis, according to J. A. Long, Carthage water superintendent. Ponds and lakes in the area are being used as long as they continue to produce water.

Some 25,000 gal. still are being trucked in daily from Southern Pines. This, together with 40,000 gal. flowing daily from Carthage's dwindling springs, plus the 60,000-gal. output of the Army mobile units, will bring the town's available water up to nearly three-fourths of its normal consumption of 220,000 gpd.

(Continued on page 55)

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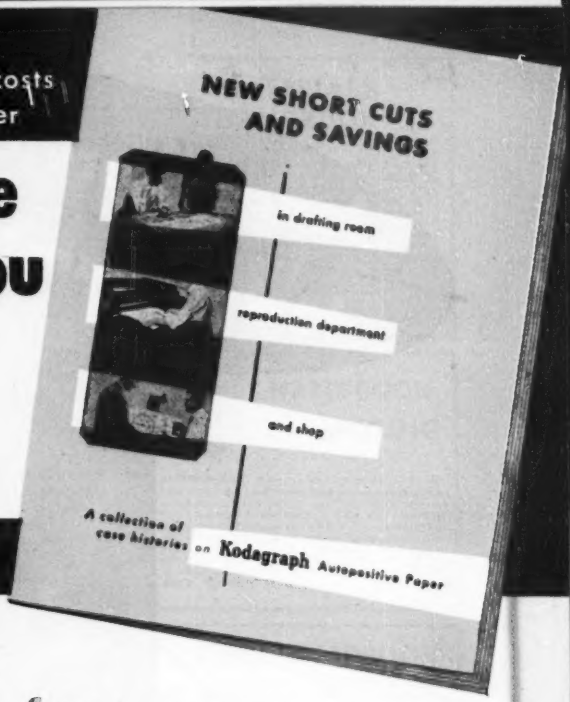
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Municipal briefs

• **Dallas housing**—In 1943 and 1944 the federal government built three temporary low-rent war housing projects of 2,681 apartments at Dallas, Tex. They are still occupied, but a controversy has arisen over them. City council has asked the government to tear down the unsightly homes because Dallas now has a substantial housing surplus and these substandard and poorly-maintained buildings make normal community development of the area impossible. Property-owners who leased the land to the government also are clamoring for the return of their property. Public Housing Administration at Washington is considering the matter, but wants to ascertain whether other dwellings at reasonable rents or selling prices will be available to families who would be ousted from the "temporary" housing.

• **Bridge problem in Maine**—Despite a warning from a Maine State Highway Commission engineer that repairs to the $1,000,000 bridge between Portland and South Portland should be undertaken at once, the Bridge Advisory Board appointed by the legislature, has delayed decision. The principal hitch is over the question whether to borrow $650,000 to repair the 35-year-old structure, or build a new high-level bridge over the Fore River. The Highway Commission Chief Engineer Lucius D. Barrows estimates the cost of a new bridge at $14,000,000. The site is in Cumberland County, but the state may be called in the help finance repairs to the old structure or to build the proposed high-level bridge.

• **Durable brick pavement**—An old-fashioned brick street which has served the main industrial section of Jacksonville, Fla., for more than 40 years is finally getting a new surface. City Paving Engineer William Bryant reports, "We don't know of any street that gets heavier use than Talleyrand Avenue. Axle loads on some white shell-carrying trucks, vans and oil trucks go up to 18,000 and 20,000 lbs which is the most the state will allow." Talleyrand Avenue parallels the waterfront. All heavy industries on the river have to use the street, which has been only 20 ft wide. The improved street will be 40 ft wide. The old stone curbs are being replaced with concrete curbs and gutters and parking strips by Duval Engineering and Contracting Co. A concrete base will be applied between the parking strip and old bricks. Jaxon Construction Co. will apply an asphalt resurfacing over the center 26 ft.

• **County traffic engineer**—On July 31, the Dallas, Tex., county commissioners voted to hire a full time traffic engineer to set up a traffic planning and control program for the entire county. This year the Texas Legislature gave counties the right to control their traffic. Dallas County has asked Dallas City Traffic Engineer Lloyd Braff for aid in installing a system of traffic signals, markings and speed zones for the county and he is working on it.

• **Emergency water supply**—The Civil Defense Administration is urging communities to get busy on plans to keep water supplies functioning in an emergency. Suggestions for that and on sabotage prevention are contained in a new manual for state and local civil defense officials.

• **To double its water supply**—The city council of Columbus, Ohio, has approved a $12,500,000 financial program to double the capacity of its present water supply and pumping system.

• **Water for subdivisions**—The King County Planning Commission and the Seattle-King County Health Department have announced that permission for all future subdivisions and residential building will depend upon assurance of sufficient water. Approval of plans for 150 homesites in the area across Lake Washington from Seattle is being withheld for that reason. The Seattle water department may begin serving this area in three years. Wells now in service have proved inadequate.

• **Parking garages**—The building of two parking garages in the central business section of Springfield, Mass., is recommended by Robert A. Mitchell, consultant of the Citizens' Committee for Off-Street Parking. Privately financed at a cost of $1,700,000, the two buildings would have a total capacity of 881 car spaces. Mr. Mitchell is chief of the traffic engineering division of Gannett Fleming Corddry & Carpenter, Inc.

• **Less locomotive smoke**—In Philadelphia, Pa., locomotive smoke has been reduced 80 percent over the last two and a half years, John L. Hodges, chief of the city Division of Air Pollution Control, has reported. With the cooperation of the railroads the remarkable improvment has been possible. Hodges said 50 percent of the smoke reduction is due to the replacement of steam locomotives by diesel engines, and the other 30 percent to better methods of firing, instruction and supervision.

MATERIALS HANDBOOK

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1. New Seventh Edition presents the most pertinent and important facts relating to more than 5500 materials to enable executives, purchasing agents, and engineers to make comparison, avoid checking many sources, and quickly get a working knowledge of the materials best suited for a particular purpose. Gives detailed information on chief characteristics, comparative data, sources, substitutes, admixtures, and uses for each material. Includes a section on important economic geography. By George S. Brady, 7th Edition, 679 pages, $8.50

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3. A vast compilation of data and methods for the most effective uses of piping . . . principles that influence the design, construction and use of piping systems. Covers steam power-plant piping, building heating systems, plumbing systems, refrigeration piping, hydraulic power transmission piping, refinery piping, and many others. By Sabin Crocker, 4th Edition, 1376 pages, 763 illustrations, $8.50

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4. New third edition covers fundamentals, theory, and practice of civil engineering. Helps you handle all kinds of civil engineering jobs—particularly those outside your specialized field. Ten big sections discuss everything from city surveying, through welding and riveting. Editor-in-Chief, Leonard C. Urquhart, Consulting Engineer, New York, N. Y., and Newark, N. J. Former colonel, Corps of Engineers, and Prof. of Structural Eng., Cornell U. 976 pages, over 900 illustrations, tables, and diagrams, semi-flexible cover, $8.50

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MEN AND JOBS

FOREIGN VISITORS—Highway engineers from three foreign countries were in West Virginia recently studying highway construction and testing methods under sponsorship of the Bureau of Public Roads. Pictured above at the commission's office in Charleston are, seated, left to right: Onofre B. Banson, assistant civil engineer, city engineer's office, Manila, Philippines; Harry Radcliffe, administrative assistant to the West Virginia commission; Robert Albert Thomas, engineer, Chief of Materials Laboratory, Ministry of Colonies, Department of Public Works, Brussels, Belgium; standing, left to right; J. C. Cobb, district engineer, Bureau of Public Roals; Constantine Vafiopoulos, assistant director of Highway Materials Testing Laboratory, Ministry of Public Works, Athens, Greece, and Geo. W. McAlpin, construction engineer for West Virginia.

Gail A. Hathaway, center, president of the American Society of Civil Engineers, addressed a combined dinner meeting of the Dayton and Cincinnati sections of the ASCE in Middletown, Ohio. Recently returned from a round-the-world trip as chairman of the U. S. delegation to the International Engineering Conference held in India, Hathaway's topic was "An Engineer's Impression of Present Day India." At the table are, left to right, A. C. Neff, vice-president of Armco Drainage and Metal Products, Inc. Charles Black, consulting engineer and president of the Dayton section ASCE Mr. Hathaway; E. S. Birkenwals, bridge engineer for the Southern Railroad and president of the Cincinnati Section ASCE; and S. R. Ives, president of Armco Drainage.

New Appointments

State, city and county

Gerald W. Shaw, executive director of the Municipal Technical Advisory Service at the University of Tennessee, has been elected first city manager of Greenville, S. C.

M. M. Dodgett is engineer of Washington County, Iowa.

F. J. Henson is South Dakota State water resources engineer.

A. M. Anderson has been appointed executive secretary, engineer in charge and personnel director of the Niagara Frontier State Parks Commission, Niagara Falls, N. Y. Formerly he was with the New York City Housing Authority as general superintendent of construction.

Industrial and Commercial

W. H. Bolger and **Cromwell Bowen** have been advanced to manager and assistant manager of laboratories, respectively, by Robert W. Hunt Co., Engineer, Chicago, Ill.

Arvon L. Davies, formerly assistant to the president of Merritt-Chapman & Scott Corp., New York, has been appointed assistant to president of the Chemstrand Corporation, formed in 1949 on a 50-50 ownership basis by American Viscose Corp. of Philadelphia and Monsanto Chemical Co. of St. Louis. Mr. Davies joins Chemstrand headquarters at Decatur, Ala., where a plant is under construction to produce 30,000,000 lb. annually of the new acrylic synthetic fiber, Acrilan.

Formerly Mr. Davies was construction superintendent with Raymond Concrete Pile Co., New York; testing engineer and assistant research consultant with Michigan State Highway Department, and assistant civil engineering professor at the University of Michigan, where he was graduated in 1936. He was a lieutenant commander in the Seabees during the last war.

Highway departments

Eugene M. Johnson has been appointed acting bridge engineer for the Mississippi State Highway Department to fill the vacancy created by the resignation of **Charles S. Mill.**

Corps of Engineers

C. B. Stokes has been appointed assistant chief of construction for the Omaha district.

Resignations

Charles S. Hill has resigned as chief bridge engineer, Mississippi highways after 26 years. He will enter private employment.

Geo. Kempland has resigned as land

(Continued on page 58)

KEY MEN—in charge of constructing the Minneapolis, Minn., Veterans Hospital are, left to right, Harold Hansen, construction superintendent; J. D. Hedin, general contractor; and R. A. Phelps, superintendent of construction, Veterans Administration.

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Polished Misco Wire Glass, highest achievement of the rolled glass manufacturer's art, combines the utmost in protection with modern beauty.

Polished Wire Glass by Mississippi, approved fire safeguard, helps prevent drafts . . . is effective in holding fires within bounds of origin.

Records over the years conclusively demonstrate that Mississippi Wire Glass, approved fire retardant No. 32, is a dependable defense against the spread of fire. For over half a century architects and engineers have specified Mississippi Wire Glass . . . the original solid wire glass upon which the Underwriters' Standard was based in 1899 . . . the standard today by which all others are judged. Mississippi Wire Glass affords constant protection at minimum cost in windows, doors, transoms, skylights, fire escapes, vertical shafts, partitions, exterior walls and all other places where fire or breakage protection is required. Carried in stock by distributors of quality glass everywhere.

Where full vision is not required, obscure Mississippi Wire Glass is available with either hexagonal or Misco wire netting.

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WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

Practical Approach to Efficient Buildings

Simple, time-saving construction of Wyatt Warehouse, North Kansas City, Missouri, built with glued laminated beams. Sketch below shows other beam applications.

Here's a good case study of how to build a permanent structure...with large open floor areas...quickly... at minimum cost.

Glued laminated beams and purlins form the primary roof structure. Heavy tongue-and-groove decking was laid over the purlins and mopped-on roof was then applied. Beams and purlins were delivered to the jobsite pre-cut and pre-fitted, speeding construction and lowering costs.

Dimensionally Stable... No Maintenance

Formed entirely of kiln dried material, glued laminated members "stay put" without shrinking, cracking, twisting or warping. This removes the principal cause of maintenance, and results in lasting economy, and long-time usefulness.

Naturally Resistive to Destruction by Fire

These beams qualify for mill type construction which for generations has made an excellent fire record. Due to natural insulating properties of wood, heavy timber members when attacked by fire lose strength very slowly, and frequently remain fully usable even after severe exposure. Consequently, fire insurance rates are favorable to this type of construction.

"Glu-Lam" beams are particularly efficient because their dense smooth surfaces afford no entry to interior.

A new booklet, "Industrial Buildings", gives detailed information on glued laminated members. Get a copy from your nearest Timber Structures office, or mail us the filled-in coupon.

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Men and jobs . . .

clearance commissions, St. Louis, Mo.

Richard L. Boke, figure in a long controversy over the enforcement of reclamation laws in California and the negotiation of contracts for Central Valley Project water, has resigned as regional director of the United States Bureau of Reclamation's Sacramento, Calif., office to accept a state department job in Iraq.

He will be director of technical cooperation in this government's efforts to aid Iraq in developing the natural resources of that country.

Robert Westman has resigned as Monroe County, Mich., sanitation engineer, to take graduate study at the University of Michigan.

R. N. Zack of Des Moines, staff engineer for the Iowa Natural Resources council, has resigned to become assistant secretary of the Associated General Contractors of Iowa. He is a graduate of Iowa State College and served two and one-half years with the Army Engineers.

Retirements

John Carnahan, engineer in charge of records Nebraska highways, after 30 years.

Maj. Gen. Douglas L. Weart, commander of the engineer center at Fort Belvoir, Va. is retiring after 40 years.

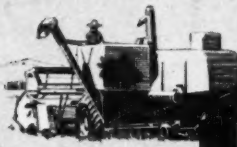
Chas. H. Blackman chief engineer of the Louisville & Nashville R.R., has retired after more than 50 years.

Three veteran members of the Texas highway department have retired. **Thos. H. Webb,** after 24 years; **M. C. Welborn,** after 31 years; and **Miss M. P. Cuenod,** after 26 years.

TESTING ENGINEER—A. B. Cornthwaite has been made testing engineer of the Virginia Department of Highways, following the retirement of Shreve Clark as head of the road agency's laboratories. He will have charge of the testing of all materials used in the construction and maintenance of 49,000 mi of highway.

FIGHTING HEART

...of all this equipment!



Chrysler Industrial 15—one of eight basic models.

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- Road Pavers
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- Hoists
- Derricks
- Pumps
- Generators
- Conveyors
- Tackle Blocks
- Winches
- Tractors
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Original equipment manufacturers the nation over install Chrysler Industrial Engines in their equipment because Chrysler-built means better performance . . . rugged dependability . . . trouble-free operation . . . longer operating life, service everywhere.

Continuous Chrysler research in higher alloy steels and famed Chrysler engineering have produced an industrial engine capable of sustained high speeds with less wear . . . an engine that costs less to operate, less to maintain.

A letter of inquiry will bring you a qualified Chrysler engineer. Address: **Industrial Engine Division, Chrysler Corporation, Detroit 31, Michigan.**

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Industrial Engines

HORSEPOWER [illegible] WITH A PEDIGREE

Skyline of historic Philadelphia as seen from the Philadelphia Museum of Art looking toward the center of town along the Benjamin Franklin Parkway.

The scenic and well-planned municipal picture (seen at top of page) formerly was frequently spoiled by flooding occurring in the below-ground subways.

Subway Flooding

RELIEVED BY ALLIS-CHALMERS 'SW' PUMPS

UNDER PHILADELPHIA'S HISTORIC STREETS, trouble used to strike after heavy downpours. Sudden rainstorms or main breaks frequently would feed water into the subways faster than it was removed, interrupting service. (See photo at lower left.)

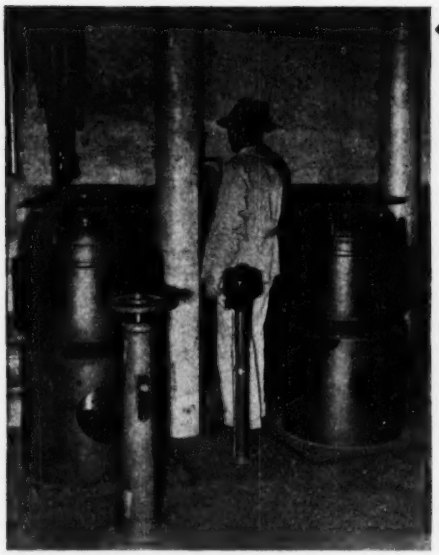
Since the subways are vital in providing transportation for this third most populous city in the U. S., these service interruptions could not be tolerated. And since the duty required positive and rapid response even though operating automatically and unattended, reliability and long life were important.

Allis-Chalmers, builders of the world's widest line of public works equipment, supplied the equipment to adequately dewater the Philadelphia subway. "SW" centrifugal sewage pumps, induction motors and transformers (all seen below as installed at the Wyoming station) were selected.

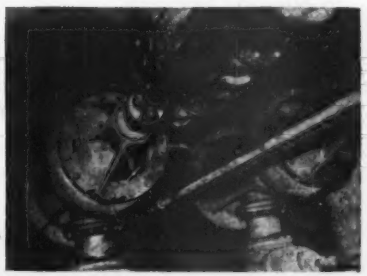
Two pumps are being installed at each of the six previously affected stations on the Broad Street subway. Located in dry wells alongside the wet well reservoirs, these emergency flood pumps automatically whirl into operation when the water level rises. They pump the water from the subways into the city sewer system at a rate of 6000 gallons per minute at each station.

Built in ratings up to 11,500 gpm, these new "SW" sewage pumps are liberally engineered to be suitable for critical, intermittent and unattended operation. The shaft is of extra heavy, heat treated carbon steel; sleeves are hardened stainless steel; anti-friction bearings are extra large, adjustable from the exterior. And the wear resistant casing is split radially for quick maintenance without disturbing intake or discharge piping.

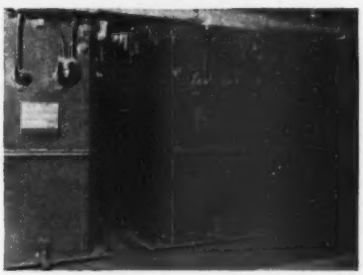
When *your* city plans modernization or expansion, take advantage of Allis-Chalmers experience in designing and building public works equipment. For detailed information ask for bulletins . . . "SW" pumps, 08S7504; centrifugal pumps, 08B6146A; complete public works equipment, 25B6607. Call your nearest A-C office or write to Allis-Chalmers, Milwaukee 1, Wisconsin. A-3486



Allis-Chalmers 60 hp induction motors drive Philadelphia City Transit subway pumps. Contractor for the installation was the William A. Bulman; equipment supplied through A-C Supply Co. of Philadelphia.



Allis-Chalmers "SW" centrifugal pumps in dry well as seen from above. They are driven from motors above by 12 ft shafts equipped with universals.



Power is supplied at full voltage from these Allis-Chalmers 37.5 kva *Chlorextol* liquid filled distribution transformers right at the load.

Chlorextol is an Allis-Chalmers trademark.

Installation photos courtesy of Dept. of City Transit

ALLIS-CHALMERS

EDUCATION, RESEARCH

BOMB WARNING DRAMATIZED—This target circle, with vari-colored rings to illustrate the degrees of destruction to be expected in an atomic attack, is held over a map of Baltimore during a lecture at the National Staff College, Federal Civil Defense Administration, near Olney, Md. Brig. Gen. George F. Wooley, director of Civilian Defense for Montgomery County, Md., and Inspector, L. T. Johnson of the District police department, hold the target, while M. C. Towner, director of the college, points out the danger areas.—Wide World Photo.

The collegiate foundation

"In college you can lay a foundation on the basis of which you can later learn more. You can acquire knowledge; you can acquire interests; you can develop attitudes; you can develop intellectual skills; all of which may be later used.

"On such a foundation you can build special competence for your own business, and when you rise to a position of responsibility, partly because of your breadth and understanding, you may extend your influence beneficially into the affairs of your community and into the affairs of the nation."—Robert D. Calkins, Vice-president and Director, General Education Board.

Canada makes progress in building research

"Building Research in Canada" is the title of a 32-page booklet just issued by the Division of Building Research, National Research Council, Ottawa, Ont.

It is a progress report which lists, among others, the following research projects completed or continuing: Experimental houses at the Montreal Road Laboratories; soil temperatures; study of northern soils; condensation in buildings; concrete floor slabs for basementless houses; the performance of paint on the exterior of houses; masonry and mortar studies; vibration studies at Winnipeg; Toronto subway research; the heat pump; corrosion of galvanized domestic hot water tanks; Winnipeg flood studies; Mackenzie Valley foundation studies; study of building settlements; and outdoor corrosion research.

Brief news of education and research

• **Sanitary engineering**—A course in sanitary engineering will be added to the curriculum at Ohio State University, Columbus, this fall. The new course, developed as an option in the civil engineering curriculum, will lead to a bachelor's degree in that field or a combined bachelor of civil engineering and master of science degrees upon completion of five years of study.

• **Wood framing**—Through a study of wood framing practices, the Housing and Home Finance Agency and the University of Illinois Small Homes Council hope to reduce the structural cost of homes. Wood framing and roof construction methods will be analyzed to find which best take advantage of the physical characteristic of lumber without waste in materials or labor. The study is being sponsored by the HHFA Division of Housing Research which has given the university a grant for the work. Special attention will be given to developing methods for adapting clear-span roof framing to the 1½-story house, thereby providing living space on the upper floor. At present roof trusses used in such framing do not permit that space to be used.

• **Aluminum research**—Aluminum Company of America is expanding its research facilities with the erection of a new building at the aluminum research laboratories at New Kensington, Pa. The new unit—measuring 80 by 170 ft—is needed to relieve congestion and to extend research facilities to meet increasing demands of the national defense program. It will increase total floor space by about one-third. Construction is already under way, and the building will be ready for occupancy early next year. The new addition will consist of two bays, one of which will be three stories high, the other two stories. A 6-ton mill-type crane will be installed in the first bay to handle heavy research equipment.

• **Scholarships for Latin Americans**—The Puerto Rican Society of Engineers next year will grant about 20 additional scholarships for Latin American students of engineering who qualify to enter the College of Agriculture and Mechanic Arts at Mayaguez, Puerto Rico. One object is to improve cultural relations among students in this hemisphere.

• **Water survey**—A conference will be held Oct. 1-3, 1951, celebrating the dedication of the new laboratory and office building of the State Water Survey Division of the Illinois Department of Registration and Education, on the campus of the University of Illinois, Champaign-Urbana. The conference will be in three parts: hydrology, water treatment, and radar-meteorology.

Faculty Notes

Emmett H. Karrer of the civil engineering faculty at Ohio State University, Columbus, has been appointed by the International Roads Federation to make an extensive study of road building in Latin America. He leaves for a 4-month project, including analyses of technical details, training and construction organization in all countries of Central and South America.

(Continued on page 64)

FIRMS ASSOCIATED with construction of Incarnate Word Hospital—Architect, Maguolo & Quick. Contractor, C. Rollo Contracting Co., Inc. Lumber furnished by Heitz Lumber Company. Wood penta-treated by Associated Wood Preservers, Inc.

• • • •

WHERE TO USE PENTA—Poles and crossarms • Planks covering underground cables • Transformer platforms • Sills and plates • Joists and girders • Screeds and subflooring • Flooring • Roof planks • Platforms and decking • Posts and fences • Cooling towers • Millwork • Guardrails • Truck beds • Construction timbers.

Monsanto PENTA protects wood in hospital

Wood in the new Incarnate Word Hospital in St. Louis, Missouri, will last longer because it is protected by Monsanto Penta preservative. Thus penta preservative means lower maintenance costs. Wooden members in the structure which are pressure treated to retain six pounds of penta per cubic foot include: rough bucks, nailing blocks, flashing and roofing strips, all wood set in concrete or placed where moisture collects.

Monsanto Penta adds years of life to lumber by protecting it against attack by termites and other wood-boring insects... by preventing decay due to fungi. Penta is a stable chemical that gives lasting protection. It does not leach, and rain or ground water cannot wash it away.

Whether you use wood for complete buildings or only for structural parts, you can get longer service by treating with Monsanto Penta preservative. For details on the use of penta, for names of suppliers of penta-treated lumber or for addresses of firms that will custom-treat your lumber, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1759-H South Second St., St. Louis 4, Mo.

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Then... gasoline hit the hot manifold!

(Based on Hartford Claim #74651)

Last summer, while this diesel tractor was being used to clear pasture land, leaking gasoline from its starter tank hit the hot exhaust manifold. This caused a flash fire . . . intense enough to crack the fuel line and ignite the fuel oil.

The operator leaped free, suffering only slight burns, but was unable to stop the fire before it had caused $11,706.67 damage to the tractor.

Fortunately, the tractor was covered with Contractors' Equipment Insurance. Hartford paid the loss . . . permitting the owner to repair the tractor and resume operations.

• • •

Are *you* risking a big financial loss, a possible halt in operations should valuable equipment be damaged or destroyed? Protect yourself *now* . . . with a *Hartford Contractors' Equipment policy*. Write us for details or see your Hartford agent or insurance broker. In more than 5000 communities you can locate your Hartford agent by calling Western Union by number and asking for "Operator 25."

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Education, Research . . .

August E. Sapega of Bridgeport, Conn., has been appointed instructor in engineering at Trinity College, Hartford, Conn. He attended Trinity in the first Naval V-12 program in 1943 and received his bachelor's and master's degrees from Columbia University.

William Gardner Van Note has resigned as head of the Department of Engineering Research at North Carolina State College, Raleigh, N. C., to become the ninth president of Clarkson College of Technology at Potsdam, N. Y. He succeeds Jess Harrison Davis, who became president of Stevens Institute of Technology, Hoboken, N. J. Dr. Van Note has been on the N. C. State College faculty since 1933 and head of engineering research since 1946. He is a graduate of Rennsselaer Polytechnic Institute, 1929, and received his master's and doctor's degrees at the University of Virginia and Pennsylvania State College, respectively.

Ernest Boyce, Professor of Sanitary and Public Health Engineering, University of Michigan, returned home late in August from a summer spent in Germany as a member of the Public Health Planning Team sponsored by the Unitarian Service Committee, Inc. The work consisted of inspections of public health activities and round-table discussions with German public health officials and, on Prof. Boyce's part, visits to a number of water supply and sewage works installations as well as conferences with German engineers in the field of municipal engineering practice.

According to Prof. Boyce, "The German public health program does not include sanitary engineering activities similar to those found in our state health departments. However, there is interest in learning more about the use of sanitary engineers in public health work in the United States and in the possibility of establishing a graduate school of sanitary engineering in Germany. It is also interesting to note that "Standard Methods of Water and Sewage Analysis" has been translated into German by F. Sierp, chemist with the Ruhryerbaende-Essen. This should be a great stimulant to uniform laboratory practices for this type of work."

Prof. Boyce visited Karl Imhoff, eminent German sanitary engineer, and found him to be in exceptionally good health despite his age of 70-odd years. Dr. Imhoff's present address is Strasse 8, Essen, British Zone, Germany.

MEETINGS

New officers of the Wichita, Kan., Society of Professional Engineers are: President, W. D. Hartley; vice-president, R. S. Kirk; secretary, Raymond Ritter; and Orval Daniels, treasurer.

Officers nominated for 1952 by the W. Va. Society of Professional Engineers are: W. O. McCluskey, president; O. J. Swanson, 1st vice-president; Geo. W. McAlpin, 2nd vice-president; and H. J. Wagner, treasurer.

A meeting of building experts will be held in Washington Nov. 27-28 to study recent developments in atomic energy affecting the design of buildings. The conference, officially known as "laboratory design for handling radioactive materials" is sponsored jointly by the American Institute of Architects and the Atomic Energy Commission. It will be conducted by the Building Research Advisory Board of the National Research Council, National Academy of Sciences, where the meetings will be held. The program includes the following subjects and speakers: "The Design of Laboratory Facilities for Research with Radioactive Materials at Various Levels"—Alexander MacIntosh; "Air Supply and Exhaust for Laboratories Handling Radioactive Materials" Carlton P. Roberts; "Shielding for Various Levels of Radioactivity"—Nelson B. Garden; "Surfaces and Finishes for Radioactive Laboratories"—James G. Terrill; and "Waste Disposal"—E. C. Pitzer.
Each of the subjects will be discussed by a panel, then opened up to a general discussion from the floor. The meeting will be attended not only by architects and engineers but also contractors, manufacturers and the business and trade press. It is expected that the conference will result in the dissemination of much material now classified dealing with design and construction of atomic installations.

New officers of the Minnesota Federation of Engineering Societies are: N. K. Ryken, president; H. D. Cobb, 1st vice-president; G. B. Moore, 2d vice-president; A. O. Lee, 3d vice-president, and Robert B. Scott, secretary-treasurer.

A. S. Horner, president of A. S. Horner Construction Co., Denver, has been nominated for president of the Associated General Contractors of America for next year; and C. P. Street, of McDevitt and Street Co., Charlotte, N. C., was nominated vice-president.

CALENDAR

First Pan American convention, International Road Federation, Municipal Palace, Lima, Peru, Oct. 5-6.

Federation of Sewage & Industrial Waste Association, Municipal Auditorium, St. Paul, Minn., Oct. 8-11.

Concrete Reinforcing Steel Institute, semi-annual meeting, Grove Park Inn, Asheville, N. C., Oct. 8-13.

Structural Engineers Association of California, The Ahwahnee, Yosemite National Park, Calif., Oct. 11-13.

American Society of Planning Officials, national conference, William Penn Hotel, Pittsburgh, Pa. Oct. 14-18.

Street Maintenance and Sanitation Officials, Ohio, Hotel Pic-Ohio, Youngstown, O., Oct. 18-19.

Engineers Council for Professional Development, Statler Hotel, Boston, Mass., Oct. 19-20.

National Council of State Boards of Engineering Examiners, Statler Hotel, Boston, Mass., Oct. 21-24.

Engineers' Society of Western Pennsylvania, water conference, William Penn Hotel, Pittsburgh, Pa., Oct. 22-24.

American Society of Civil Engineers, annual meeting, Statler Hotel, New York City, Oct. 22-25.

National Standardization Conference, Waldorf-Astoria Hotel, N. Y. City, Oct. 22-24.

American Association of State Highway Officials, Fontinelle Hotel, Omaha, Neb., Oct. 23-26

American Institute of Steel Construction, Inc., annual meeting, the Greenbrier, White Sulphur Springs, West Va., Oct. 22-25.

California section, American Water Works Association, Fairmount Hotel, San Francisco, Oct. 23-26.

Florida Sewage and Industrial Wastes Association and Florida section A.W.W.A. Princess Issena Hotel, Daytona Beach, Fla. Oct. 28-31.

American Concrete Institute, regional Sheraton Hotel, St. Louis, Mo. Oct. 30-31.

American Public Health Association, annual meeting, Civic Auditorium, San Francisco, Calif., Oct. 29-Nov. 2.

Conference on Coastal Engineering, Rice Hotel, Houston, Tex., Nov. 7-10.

Conference on Atomic Installation in Buildings, Building Research Advisory Board, National Academy of Science auditorium, Washington, D. C. Nov. 27-28.

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OBITUARY

Herbert M. Hale, 69, retired construction engineer, former chief engineer for The Holbrook, Cabot, Rollins and Fry Co. of Boston, died Sept. 1 at his home in Orient, N. Y. Mr. Hale served as engineer for the contractors on many large construction projects, including New York subways and the Navy drydock at Bayonne, N. J.

Charles Haydock, 63, consulting engineer and an authority on water systems died Aug. 31 at Philadelphia. He received his degree in civil engineering from the University of Pennsylvania in 1926. He was the author of many technical articles dealing with public utility problems. He was a past president of the Philadelphia Chapter of the Pennsylvania Society for Professional Engineers.

Thomas L. Boylan, 65, a retired civil engineer formerly with the United States Army Engineers, died Aug. 29 at Butler, Pa.

Frederick J. Jewitt, 71, Canadian civil engineer, died at Ottawa, Ont., Aug. 28. He was a 1904 McGill graduate in civil engineering. He took a prominent part in the construction of the Welland Canal in Ontario between Lakes Erie and Ontario. In 1938 he took charge of the construction of the Gander Airport in Newfoundland. Then he went to Ottawa as chief of wartime construction for the Department of Transport.

Chas S. Henning, 63, member of Henning-Payne Construction Co. Abilene, Tex., died Aug. 26. He was past president of the Association of General Contractors and in 1950 was given a life membership in the American Society of Civil Engineers. He served as project or chief engineer on various defense projects during World War 2 and at one time was a division engineer with the Texas State Highway Dept.

Howard R. Staley, 51, civil engineer of Silver Spring, Md., died Aug. 23 in his office at the Atomic Energy Commission in Washington, D. C., where he was an engineer. He attended Iowa State University and received his masters degree at Massachusetts Institute of Technology. Before going to Washington last January, he was professor of engineering for 15 years at MIT. Prior to that he was engaged in the construction business in Iowa. An authority on construction materials, Mr. Staley recently had two books published on that subject.

James S. Barton, 43, structional engineer, died at Front Royal, Va., Aug. 27. He served with the Navy Seabees in World War II.

Murray Alexander Stewart, 69, city works commissioner of Toronto, Ont., since 1947, died Aug. 25. He was with the Toronto public works department for 46 years.

Kenneth A. Woodrough, 59, of Newton, Mass., a civil engineer with the Thomas Worcester Co. of Boston, died Aug. 28.

Sydney William Kitson, 53, manager of the Public Works Division of Worthington Pump and Machinery Corp., Harrison, N. J., died Aug. 28, in Boston, Mass. He was a graduate of Massachusetts Institute of Technology, and was with Worthington for the last 30 years. He was a lieutenant in World War I.

Claris Allen, 46, assistant chief engineer of the Indianapolis Water Co., died Aug. 29. He joined the water utility in 1930 as an assistant engineer.

Thomas D. Lebby, chief of the TVA construction and maintenance department, died Sept. 1 at Chattanooga, Tenn.

Walter A. Shaw, 83, consulting engineer, Chicago, died Sept. 3. He served in various engineering capacities for the Chicago Rapid Transit Co. and later the Chicago surface lines. He took entire charge of operations in 1942 and 1943.

G. Nelson Perry, 46, head of the consulting civil engineering firm of G. Nelson Perry & Co., Inc., Boston, Mass., died at New Ipswich, N. H., Sept. 5. He was graduated in civil engineering in 1929 from Northeastern University. He then went with the consulting engineering firm of J. R. Worcester & Co. later changed to Thomas Worcester, Inc., Boston. In 1950 Mr. Perry formed his own firm of structural engineers in Boston.

Alex N. Nairn, 70, died Sept. 3 at Winnipeg, Man. He went to Winnipeg in 1905 and became superintendent of construction for the Nelson River Construction Co. Ltd., retiring in 1946.

Claris Allen, 46, assistant chief engineer of the Indianapolis Water Co., died Aug. 30. He joined the firm in 1930 as assistant engineer, becoming

principal assistant engineer in 1944, and last year assistant chief engineer. He had served as resident engineer, supervising construction of the Geist Reservoir, and the Fall Creek purification plant. Before going to Indianapolis, he had worked with the Army Corps of Engineers in Illinois. He was a graduate of Purdue University.

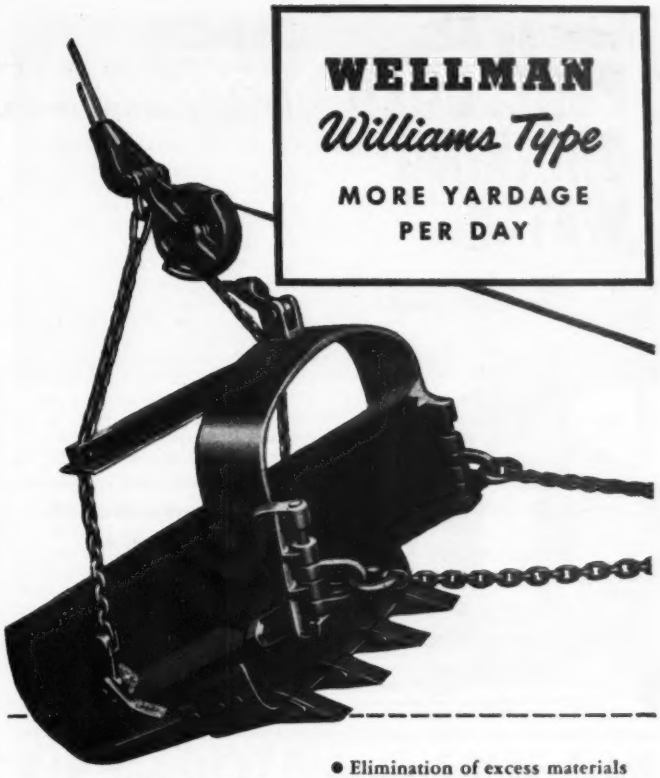
Charles W. Burke, 66, chief engineer of the N. Y. City Board of Transportation, died at Hawthorne, N. Y., Sept. 9. He had been in railroad engineering and maintenance since his graduation from Stevens Institute of Technology in 1902. Early in his career he was an assistant engineer on the Grand Central Terminal improvement project. He was also on the engineering staff for the construction of the Pennsylvania R.R. tunnels under the Hudson River. In 1940 he became superintendent of maintenance of way and later was promoted to chief engineer of the Board of Transportation in charge of the entire rapid transit, trolley, bus and coach division of N. Y. City's rapid transit system.

Julian Arthur Arntson, civil engineer, of Tacoma, Wash., died there Aug. 31. He worked for the city engineering department before he was 21, later worked for smelting companies in Arizona and New Jersey before returning to the department in 1925.

Robert E. Willems, 61, road engineer and superintendent of the highway maintenance and sanitation divisions of Akron, Ohio, died Sept. 1. He had headed the street repair division since 1945. For a dozen years he was with Hal G. Sours when the latter was Summit County highway engineer, serving as chief deputy county engineer. Sours, after he became state highway director, named Willems as division engineer at Cleveland to head the multi-million dollar highway program in Cuyahoga, Lake, and Geauga counties.

Daniel McBane Fraser, 76, civil engineer and surveyor, long employed by the Northern Pacific Railroad Co. in Montana, Idaho, and Wyoming, died in Wellsville, Ohio, Sept. 3.

E. Brad Russell, 41, an engineering employee of the Tennessee Department of Highways & Public Works at Nashville, died Sept. 8. With the highway department for more than 21 years, he served in various engineering capacities, but spent the greater portion of his career in the federal-aid department of the headquarters office. At the time of his death he was the principal assistant in the federal-aid department with the rating of senior resident engineer.



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LABOR

Jurisdictional disputes on the rise

In a series of reports from all sections of the country there is a noticeable rise in the number of jurisdictional disputes between trades. Many of them concern practices which have been unquestioned for 15 years or more. On one New England job carpenters questioned the right of ironworkers to sling, tie and hoist large forms for use on upper stories of an industrial building, declaring that they would handle them from now on. On a Springfield, Mass. school job 17 bricklayers walked off after unsuccessfully trying to take over a job held by carpenters for at least 25 years —that of installing acoustical tile. In Louisiana electricians and ironworkers had it hot and heavy when the latter refused to allow the electricians to sling and hoist their heavy electrical equipment; transformers, motors, panelboards, etc. In Boston more electricians demanded—and received—authorization not only to unload boxes containing fluorescent units, but also to remove the empty boxes after they had been tied together for return to the manufacturer. Authentic reports say that in most cases instructions have come down from international levels, and are disrupting past practices which have been hitherto unchallenged.

Carpenters awarded lath trim; lathers appeal

While a 150-home project in Phoenix, Arizona was stalled over a jurisdictional dispute, the International AFL Arbitration Board took over the case of who fastens lath around the project's doors, carpenters or lathers. The case was decided in favor of the carpenters. Frank H. Martin, secretary of the lathers' union, protesting that "this work receives plaster, therefore it is our job", said that the Phoenix lathers plan to appeal at a West Coast board meeting.

Construction employment up

Contract construction employment moved upward again in July, the monthly report from the Bureau of Labor Statistics discloses. The preliminary figure was 2,726,000 for July, compared with the preliminary figure of 2,683,000 in June and 2,592,000 in May. Final figure for April was 2,471,000.

Pickets removed from Kentucky's Capitol annex

The labor day weekend extended from Friday morning to the following Wednesday morning for some 200 tradesmen engaged on the $5,500,000 office building under way in Frankfort, Kentucky in the rear of the State Capitol. Local 110 of the sheetmetal workers declared that E. C. Strong Company of Cincinnati, subcontractor on the job for plumbing, heating and air conditioning, were "unfair".

The local withdrew its pickets on Wednesday, however, on instructions from its headquarters in Louisville, permitting all other tradesmen to return to work. However the eight members of Local 110 refused to go back to their jobs. The building in question, a four story and basement stone structure, will house the state's departments of Economic Security, Finance and Revenue, and the Treasury.

Unions lauded for Kansas City flood work

Plumbers and steamfitters Local No. 8 of Kansas City, Missouri was host to the 26th annual convention of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the U. S. and Canada on September 10th. Taking over the gavel before 2,200 delegates, international president Martin P. Durkin turned over the microphone to Mayor Kemp who thanked the various tradesmen through the assembled plumbers group for their cooperative action and help in the recent flood emergency. He also lauded their "excellent record for settling disputes without strikes".

Other speakers during the 5-day session were George Meany, secretary-treasurer of AFL, Secretary of Labor Maurice Tobin, AFL president William Green and Thomas J. Kalis, industry stabilization commissioner of the Wage Stabilization Board.

Akron sweats out six-paid-holiday strike

Half a dozen important city projects have been paralyzed in Akron, Ohio due to a strike on the part of 200 truckdrivers and warehousemen who want six paid holidays for all their members. After approval by the Wage

Stabilization Board, 14 building supply houses agreed to the terms for only those employees with a year or more of service.

Meanwhile, particularly because of a cement-delivery shortage, several important highway and bridge jobs have been stopped and city fathers fear that the work will be forced over into cold weather. The stalemate continues, and Norman Willis, business agent for the truckers' Local 348 says he's waiting for company spokesmen to make the next move.

Consulting engineers act as mediators in dispute

Circleville Construction Company of Circleville, Ohio has filed a friendly suit in Delaware County Common Pleas Court asking for an additional payment of $10,972 from the city of Delaware, Ohio. The company recently completed a contract for installation of a series of city sanitary sewers.

The suit is based on a compromise agreement between the city and the contracting firm for payment of extras in connection with the main contract for sewer work. Originally the Circleville Company had computed its payments for the extras at almost $50,000.

The consulting engineering firm of Burgess and Niple in Columbus, Ohio was called in as disinterested mediator and it was they who suggested the figure of $10,972 during the subsequent negotiations.

Labor briefs . . .

Michigan men get 12½¢—AFL Building Trades unions in Lewance County, Michigan called off a threatened strike vote and accepted a 12½¢ hourly wage increase from the Southeastern Michigan Contractors Assn. The increase, which must be approved by WSB, brings the top scale to $2.74½.

350 carpenters back—Another boost conditioned on WSB approval was the 15¢-per-hour jump from $2.15 to $2.30 given to 350 AFL carpenters on strike at the Tullahoma, Tennessee project of the Arnold Engineering Development Center.

WSB says OK to raises for 28,000—On September 4th raises were approved for from 2 to 7½ cents per hour for about 28,000 construction mechanics and laborers in the Chicago area. These jumps are above and beyond the increases allowed under WSB's 10% formula. 5,000 electricians received 7½¢ to $2.85; 4,000 sheetmetal workers, 5½¢ to $2.75; 4,000 plumbers, 5¢ to $2.75 and almost 15,000 laborers, 2¢ to $2.00, retroactive to last June 2nd.

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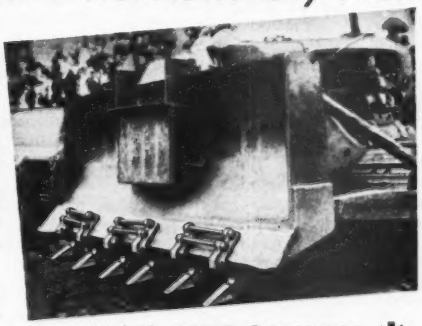

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CONSTRUCTION BUSINESS

"Million dollar" contractors increase—account for 79% of 1950 dollar volume

"Million dollar contractors" accounted for 79% of the total volume of work built under general contract in 1950. The 1,777 contractors in this group had an aggregate volume of $7,073 million.

This was revealed today by the Business News Department of ENGINEERING NEWS-RECORD in an analysis of ENR reports of contracts awarded in 1950.

• **Big jobs, big builders**—The study showed that 26 out of every 100 contractors analyzed had a business volume of $1 million or more last year. The analysis covered only those contractors who handled $100,000 or more in general contract work during the year, as reported to ENGINEERING NEWS-RECORD.

The number of "million dollar contractors" in 1950 was the highest in 11 years. In 1940, there were 475 contractors who handled a million dollars or more in contract volume. This figure rose to 719 in 1941 and climbed to 1,035 in 1942. The select group became smaller in 1943, when only 515 were reported. Then, in 1944, the million dollar group shrunk to 272.

From that time on, however, the number of contractors whose contract volume is $1 million or more, has grown steadily every year. In 1945, there were 315 such contractors; in 1946, 659 and in 1947, there were 758.

In 1948, for the first time since 1942, more than 1,000 contractors moved into the top bracket. There were 1,007 that year. A few more were added in 1949 when the number reached 1,059. Finally, in 1950, there was the biggest jump reported to date. The number of contractors reported in the million dollar bracket soared to 1,777.

The 1,313 contractors whose volume in 1950 was more than $500,000 but less than $1 million represented 19% of the total number of contractors analyzed. Their projects had a total dollar volume of $886.7 million, 10% of the total volume built under contract.

• **Enough for all**—While a relatively small number of big firms took a large slice of the construction pie, the figures showed the construction industry is not a monopoly by any stretch of the imagination.

There were 3,796 contractors—55% of the total—whose 1950 volume was in the $100,000 to $500,000 bracket. This segment of the industry handled 27% of all projects placed under contract. They accounted for a total volume of $995.9 million, 11% of the total.

In the public works field, a few seemed to be doing the work of many. In water works construction, 3% of the contractors did 43% of the volume; sewer construction, 4% of the contractors did 51% of the volume; bridges, 6% of the contractors handled 60% of the volume; streets and roads, 11% of the contractors did 70% of the work; earthwork, irrigation and drainage, 4% of the contractors accounted for 70% of the volume; and airports, 3% of the contractors did 62% of the work.

Analysis of contract awards for industrial construction showed that 15% of the contractors did 74% of the volume. Thirty percent of the contractors in the commercial and public buildings field did 56% of the work.

The owner-builder's role in the 1950 construction story was also shown in the ENR study. Owner-builders accounted for 14% of the total volume of industrial construction last year.

In public building and commercial construction, owner-builders accounted for 34% of the volume. Much of this is traceable to the operations of large-scale speculative home builders such as Levitt & Sons.

Continuing campaigns conducted by general contractors against force account and purchase-and-hire practices in the field of heavy construction seemed to pay dividends. The study showed that 92% of the work in the heavy construction field in 1950 was performed under general contract and only 8% by owner-builders.

Lumber production high; demand down for 3 months

Output of lumber during the second quarter of this year continued at the high levels attained in the first quarter, even though demand decreased, according to the 81st quarterly report of the Lumber Survey Committee to the Secretary of Commerce.

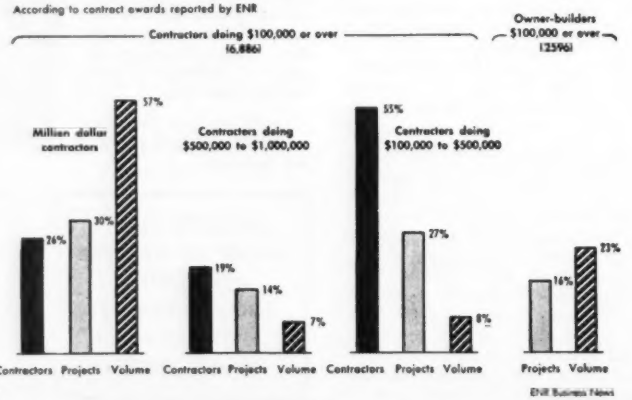
Production of lumber totaled an estimated 10,992 million board ft, one of the highest second quarters on record.

Continuing favorable weather throughout most of the country and the possibility that demand will pick up this fall have kept mill operators producing at a record pace, the report said.

R. A. Colgan, Jr., committee chairman, said that evidence of a softening lumber market can be found in the decrease in shipments and new orders, coupled with a build-up of lumber

(*Continued on page 71*)

Million dollar contractors handled more construction than all others combined in 1950



Construction business . . .

stocks at the mill and a gradual decline in average wholesale lumber prices.

Direct and indirect military requirements for lumber have not yet taken up the slack in demand created by the credit restrictions on housing, Colgan said.

Producers of hardwoods have also felt the effects of a diminished demand, according to the committee. Orders for hardwood flooring were more than 25% below production in the second quarter, while stocks at the mill increased more than 50% during the quarter.

Steel expansion slows

The National Production Authority reports that the $2-billion program for expanding the nation's iron and steel producing capacity will be one-third completed by the end of September—but the shortage of structural steel will slow down expansion during the fourth quarter.

Approximately $618 million worth of new or expanded ingot-making facilities will be ready by Oct. 1. This is based on figures from 67 companies that have received certificates of necessity for construction.

The aluminum expansion program is getting all the structural steel it needs for construction of $501 million worth of new facilities by the end of 1953. More than $72 million worth of this construction has been completed, NPA officials said.

Concrete paving awards slump in August

Concrete paving awards for August fell 51% from the July totals, the Portland Cement Association reported. Principal factor in the decline was the nosedive in airport awards which tumbled 83.3% below the July figure.

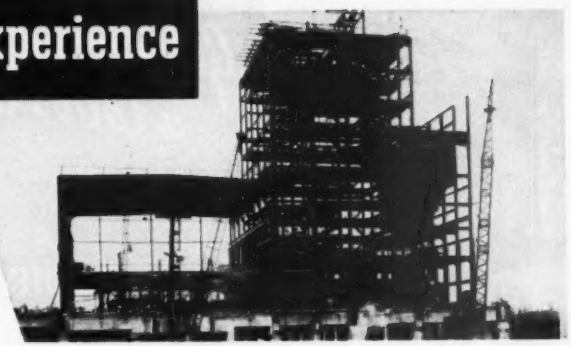
The PCA figures show that 1,436,269 sq yds of portland cement concrete pavement were awarded for roads in August. This is down 49% from July, 1951 and 50% below August, 1950.

Awards for streets and alleys in August totaled 2,357,612 sq yds, up 14% over July, 1951, but down 33% from August, 1950.

Airport awards totaled 714,131 sq yds of portland cement concrete. This was down 83.3% from July, 1951, but was 275% above August, 1950.

(Continued on page 72)

Experience



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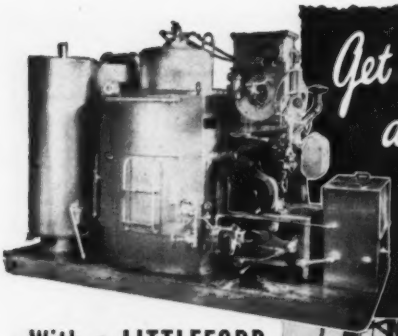

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Dept. E, Scranton 2, Penna.

Business briefs . . .

• **Wilson demands more steel**—Charles E. Wilson, Director of Defense Mobilization, has called a meeting of steel producers in Washington this week to discuss future production. He said he will "demand" an increase of at least 1 million tons in output in the first quarter of 1952 and another increase of 2 million tons in the second quarter.

• **Rising costs predicted**—Home building costs will rise at least 5% next year, Frank W. Cortright, executive vice president of the National Association of Home Builders, has predicted. Building cost increases will be traced to steel, coal, transportation, labor and taxes, he said.

• **Legality questioned**—Samuel Ennis, an Indiana taxpayer, has asked for an injunction to prevent the new Indiana Toll Road Commission from functioning.

• **Production declines**—The Department of Commerce reported that production of unglazed bricks, unglazed structural tile and clay sewer pipe declined in June, compared to May of this year. Brick and tile production was down 1%; output of clay sewer pipe declined 4%.

• **Housing starts**—The Bureau of Labor Statistics reported that housing starts for August totaled 85,000. BLS also revised its May figure upward from 97,000 starts to 101,000. That makes an eight-month total of 758,500 starts.

• **Engineers umpire dispute**—When the Circleville Construction Co. of Circleville, Ohio and the city of Delaware, Ohio failed to reach agreement on the amount of money to be paid to the contracting firm for extra work on a sewer system, they called in Burgess & Niple, consulting engineers of Columbus, Ohio, as umpires. The contractors have now filed a friendly suit to obtain the extra amount recommended by the mediators.

• **Phone company expands**—The New York Telephone Co has announced plans to spend $180 million for construction in 1952. In the New York metropolitan area, the company's 1952 plans provide for 31 new central offices and major addition to 43 others.

• **Plead for architects**—The American Institute of Architects took a look at the $5.8 billion military construction program pending in Congress and asked the Department of Defense to help the smaller architects and those in non-defense areas to get part of the design work. The AIA suggested special design procurement offices where building programs would be broken down into projects and allocated to architectural firms according to their type and size.

Construction business . . .

UNIT PRICES BID BY CONTRACTORS

East Hartford-Glastonbury expressway paving Conn.

Both separate and joint bids were taken July 30 by the State Highway Department, Hartford, on two sections of the East Hartford and Glastonbury Expressway with a resulting low bid of $1,713,932 on the combination, $40,608 less than the sum of the two separate low bids.

Work will consist of reinforced concrete lane paving, two 24-ft lanes, and must be completed in 640 calendar days. A penalty of $50 per calendar day is set for failure to meet this schedule, but due to the necessity for cooperation with various public utility companies which may cause delays to the contractor, the Commissioner will consider requests for additional calendar day allowance due to such delays. Within two areas in Town of East Hartford work may not start until after April 1, 1952 but must proceed swiftly to cause least interference to the traveling public.

Most unit prices in the low bid were the same in both the joint and the separate bids but the $40,608 differential came in these items which were higher in the separate bids: earth and rock excavation 10 c. a cy higher; bridge excavation, 50 c. a cy; borrow, 4 c. a cy; portland cement, 5 c. a bbl; subbase, 8 c. a cy, and concrete for pavement 25 c. a cy; mixing bituminous stabilized gravel shoulders, 5 c. a sy higher; service bridge $10 each higher than the combination bid prices shown in the following table.

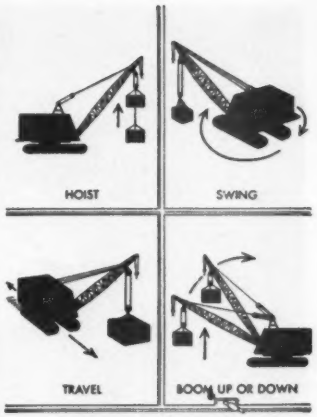
Minimum wage rates to be paid are, for skilled labor $2.05 to $2.75, intermediate grade labor, $1.40 to $1.90, common labor, $1.70. Bricklayers and ironworkers take the top scale, derrick operators, $2.47, carpenters, $2.325, painters, $2.20, but spray painters, $3, equipment operators $1.90, push-mobile operator $1.85, mixer truck, $1.55, dump truck, $1.45.

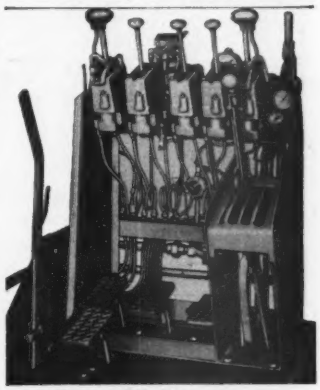
Bidders include:

1 D. V. Frione & Co., Inc., New Haven, Conn. C $1,713,392
2 Savin Constr. Corp., East Hartford, Conn. 1,718,153
3 Arute Bros. Inc., New Britain, Conn. 1,865,663

Item	Unit	Quantity	Unit prices 1 C	2
Clear and grub	ls		$39,000.00	$50,000.00
Earth exc	cy	147,544	.35	.40
Rock exc	cy	1,883	3.5	5.00
Bridge exc	cy	2,799	2.00	5.00
Rem exist mary	cy	17	5.00	10.00
Tr exc, 0'-6' deep	cy	9,214	1.25	1.50
0'-10' deep	cy	3,884	1.50	2.00
0'-15' deep	cy	488	3.00	10.00
0' to over 15' deep	cy	77	5.00	20.00
Ditch exc	cy	537	1.50	2.00
Borrow	cy	889,082	.40	.40
R C pipe, 12"	lf	76	1.66	2.00
15"	lf	6,164	2.23	2.50
18"	lf	4,964	2.85	3.50
24"	lf	1,640	4.45	5.00
30"	lf	352	6.74	7.00
36"	lf	304	10.44	12.00
42"	lf	440	13.89	14.00
48"	lf	64	16.73	16.00
ACCM pipe, 12"	lf	30	2.41	3.50
15"	lf	498	3.12	4.00
18"	lf	350	3.69	5.00
24"	lf	224	5.70	7.00
36", 10 Ga	lf	220	14.35	9.00
10"	lf	862	2.26	3.00
Perf ACCM pipe, 15"	lf	142	2.65	4.00
Reinld 24" R C pipe	lf	100	3.60	5.00
18" ACCM pipe elbow	lf	66	8.50	10.00
10"	lf	156	3.20	8.00
Underdr, 6" perf ACCM pipe	lf	3,548	2.58	1.75
Outlet for same	lf	272	1.05	1.75
Catchbasin, Type "C"	ea	57	185.00	200.00
Type "C-G"	ea	33	185.00	200.00
Type "C-L"	ea	4	185.00	250.00
Type "C-G" over 10' deep	ea	3	250.00	300.00
ACCM drop inlet	ea	26	41.30	200.00
Type "C-G" drop inlet	ea	7	150.00	200.00
Manhole	ea	22	200.00	250.00
Manhole over 10' deep	ea	1	250.00	300.00
Reset manhole	ea	1	35.00	100.00
Convert C B to Type "C"	ea	3	75.00	200.00
Portland cement	bbl	69,209	3.95	4.00
Natural cement	bbl	457	4.25	4.00
Cl "A" Concrete	cy	1,718	29.85	34.00
Conc for steps & copgs	cy	10	50.00	80.00
½" Prem bit exp. jt. filler for bridges	sf	940	.30	.50
Def steel bars	lb	269,358	.11	.10
Metal flashing	lb	562	1.50	1.50
Damp proofing	sy	2,043	.70	.75
Broken stone for drns	cy	40	4.40	5.00
Gravel fill	cy	889	3.00	3.00
Pervious mat'l	cy	21,380	.80	.50
Subbase	cy	66,925	.02	.50
Formation of subgr	sy	193,155	.15	.10
Gravel borrow	cy	8,355	.80	1.20
Broken st for base	t	6,540	3.10	2.50
Rolled gravel base	cy	2,812	1.25	3.00
Br st for bit mac base	t	40	3.50	4.00
¾" prem bit exp jt	lf	910	.20	.60
Trans exp jt	lf	17,720	1.25	1.30
Steel tie bars	lb	52,155	.08	.15
Conc for pave	cy	42,080	9.50	8.60
Bit conc, dense graded pave, Cl I	t	2,280	8.15	7.65
Br st for bit mac pvt	t	990	3.50	4.00
Br st for drives	t	95	4.40	4.00
Rolled bank gr surf	cy	4,256	1.50	1.50
Mxg bit stab gravel shldrs	cy	67,880	.20	.25
Bit mat'l for shldrs	gal	128,635	.16	.15
Surf tr	gal	20,180	.16	.15
Bit mac pave	gal	18,800	.16	.15
Sand cover for bit surf tr	sy	40,380	.05	.10
Service bridge	ea	150	40.00	20.00
Gravel shoulders	cy	15,125	1.85	1.10
Concrete curb	lf	200	2.00	3.00
Conc park curb	lf	500	2.00	1.00
Dwld conc park curb	lf	9,325	.50	.40
5" gran st curb	lf	5,535	3.70	3.00
5" curved gr st curb	lf	530	4.70	4.00
Br st sidewalk	t	30	4.00	5.00
Conc sidewalk	sf	2,650	.50	.40
Rolled gr sidewalk	sy	310	1.00	1.00
Relay flag walk	sf	84	.50	.50
Concrete ramp	cy	30	20.00	25.00
Paved ditch	sy	494	3.00	5.00
Farm wall fence	lf	1,000	2.00	2.00
Wire fence	lf	1,000	.45	.45
Barways	ea	5	20.00	20.00
Wire rope rail	lf	2,500	.95	1.00
Type "C" anch	ea	7	18.00	20.00
Compens type anch	ea	17	25.00	25.00
3-Cable Wire Rope Rail	lf	38,185	1.50	1.50
Single post	ea	251	5.00	5.00
Reset single post	ea	44	2.75	3.00
A-3 anchorage	ea	193	40.00	40.00
B-3 anchorage	ea	32	50.00	50.00
Calcium chloride, f & p*	t	81	65.00	50.00
Single cable compens device	ea	548	10.00	10.00
Metal railing post	ea	2	85.00	100.00
Rip rap	t	200	2.00	10.00
Concrete marker post	ea	4	20.00	20.00
Tree wells	ea	4	75.00	300.00
Permanent barricade	lf	300	8.50	8.50

*f&p furnish & place *a dry rubble masonry.





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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Massachusetts—B.A. 9/25—Commonwealth of Mass., Dpt. Waterways, 100 Nashua St., Boston, bulkhead pile and timber wharf platform, dredge, Oak Bluffs, $100,000.

BIDS ASKED—BUILDINGS

Mass., Lowell—HOUSING—B. A. After 10/1—City, Lowell Housing Auth., 562 Market St., 162 housing units. $482,400. Krokyn & Browne, 184 Boylston St., Boston, archts. CD 5/11.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., Augusta,
Ralph Romano Jr., 322 Spring St., Portland, Me., LB $126,073. bit. grav. road 3.295 mi. "127" Wiscasset F.A. Secondary Proj. S 0163 (1). Bids Sept. 5.

† **Ralph E. Vickery Constr. Co.**, Southworth Ave., Attleboro, Mass. LB $40,592. install water supply and drain pipe lines, appurtenances, intake structure and kettles, NORTH ATTLEBORO, MASS. Fish & Wildlife Service, Dpt. Interior, 57 Temple Pl., Boston, Mass.

Keasbey & Mattison Co., 258 Park Square, Boston, Mass. LB $102,647. water sys., BLACKSTONE, MASS. Town, Bd. Water Comn., Town Hall, Blackstone, Mass. Howard E. Bailey, 6 Beacon St., Boston, Mass., engr. Bids Sept. 5.

J. P. Condon Corp., 105 Coolidge Hill Rd., Watertown, Mass. LB $315,951. Contr. 710, reconstr. head house pier by causeway, City Point to Head Island, South Boston, BOSTON, MASS. State, Metropolitan Dist. Comn., 20 Somerset St., Boston, Mass. Bids Aug. 23.

John P. Condon Corp., 105 College Hill Rd., Watertown, Mass. LB $131,752. reconstr. Central St., etc., NEWTON, MASS. City, Office Street Comr., City Hall, Newton, Mass. CD 8/10.

White Oak Excavators, Inc., 61 East Main St., Plainville, Conn., CA, $745,803, masonry filters and regulator house, Contr. 209A, West Hartford, HARTFORD, CONN. Bd. Contract & Supply, Metropolitan Dist., 115 Broad St., Hartford, Conn. Bids Aug. 16, awarded Aug. 30. CD 8/22, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

E. J. Pinney Co., Inc., 220 Dwight St., Springfield, Mass. LB $414,000. Highlands Elementary SCHOOL, Western Ave., 7 Granville Rd., WESTFIELD, MASS. City, Judge F. W. Burke, chn. Bldg. Comn., Westfield, Mass. Bids 8/31 rejected. CD 8/28, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

NEW JERSEY—B.A. 9/25—New Jersey Turnpike Auth., 65 Prospect St., Trenton, N. J., paving, topsoiling and appurtenant work for service areas 10-N and 10-S of New Jersey Turnpike, Woodbridge Twp. Plans deposit $5. Fay Spofford & Thorndike, 25 Livingstone St., New Brunswick, engrs. CD 7/13/49.

New Jersey—LANDSCAPE IMPRVS.—B.A. 9/25—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton, landscape imprvt. 1.345 mi. Route 56, Sects. 1-A and 2-A, from Venice Lagoon to Adriatic Ave., city of Atlantic City, Atlantic Co. Plans deposit $10.

BIDS ASKED—BUILDINGS

N. J., Rahway—DORMITORY—B.A. 9/24—At Office Fred V. Ferber, dir. Div. Purchase and Property, State House, Trenton, 7, N. J. general work, plumbing, heating and ventilating, electric and structural steel for new dormitory addn. Prison Wing Dormitory, State Prison Farm. Plans deposit $25.

† **N. J., Caven Point**—WAREHOUSE—B.A. 9/25—U. S. Eng., 80 Lafayette St., New York, 13, N. Y., warehouses at Permanent Marine Base. Plans deposit $10.

N. Y., Marcy—STAFF HOUSING—B.A. 9/26—Bureau Contracts & Accounts, Albany, Staff Housing, Bldgs. 86 and 88, at Marcy State Hospital. Plans deposit $15. CD 7/12/45.

N. Y., Rockaway—CORPORATION YARD, GARAGE—B.A. 9/26—President Queens Boro, 120-55 Queens Blvd., Kew Gardens, Zone 15, general constr.; plumbing; heating and ventilating; electrical work and lighting fixtures for construction of Rockaway Corp. Yard and Garage, etc., Beach 75 St. and Amstel Blvd. Plans deposit $25.

SOON LETS CONTRACT—BUILDINGS

Pa., Springdale—MANUFACTURING—Pittsburgh Plate Glass Co., Grant Bldg., Pittsburgh, soon lets contract 2 story, 40x62x30 ft., brick, tile, steel, paint mfg. bldg. $90,000.

Pa., West Mifflin—PLANT—Westinghouse Electric Corp. (Atomic Power Div.) West Mifflin, soon lets contract 40,000 sq. ft., brick, tile, steel plant addn. $500,000. Hunting, Larsen & Dunnells, 130 7th Ave., Pittsburgh, engrs.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton, N. J.
Villa Contg. Co., 233 North Ave. W., Westfield, N. J., CA, $1,646,377. constr. Route 4 Parkway, Sections 9B and 9C-1 from Galloping Hill Road to Route 29, incl. 7 bridges and incidental grading, Union Twp., Union Co. Bids Aug. 21, awarded Sept. 7. CD 8/28, under LB.

NEW JERSEY—State Hy. Dpt., 1035 Parkway Ave., Trenton, N. J.
Union Bldg. & Constr. Co., 631 Main Ave., Passaic, N. J. LB, $994,186, four overpasses on Section 2C of Route 26 Extension (Trenton Freeway) Mercer Co. Bids Sept. 5. CD 8/16.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Joseph Weinstein, Inc.**, 66 Court St., Brooklyn 2, N. Y., LB. $2,387,000. Junior HIGH SCHOOL 123, Bruckner Blvd. between Stratford and Morrison Aves., Bronx Boro, NEW YORK, N. Y. Bd. Educ., 49 Flatbush Ave. exten., Brooklyn, N. Y. Bids Aug. 21. CD 8/10.

▲ **Consolidated Constructors, Inc.**, 18 E. 41 St., New York 17, N. Y. C. A. $1,031,185, general constr. Central SCHOOL, CHITTENANGO, N. Y. Bd. Educ., Central School Dist., Chittenango, N. Y. Bids Aug. 16, awarded Sept 4. CD 8/15.

Daley & Co., Inc., 1427 Cornell Ave., Trenton, N. J., LB $302,000, McGalliard SCHOOL, S. Olden and Woodside Aves., Hamilton Twp., TRENTON, N. J. Hamilton Twp. Bd. Educ., 1960 Greenwood Ave., Trenton, N. J. Bids Sept. 5. CD 8/6.

▲ **Ragnar Benson, Inc.**, Investment Bldg., Pittsburgh, Pa., CA. Approx. $9,000,000. 1 story, steel hot strip MILL, ALLENPORT, PA. Pittsburgh Steel Co., Grant Bldg., Pittsburgh, Pa. James Watkins, c/o owner engr.

▲ **Koppers Co., Inc.**, Koppers Bldg., Pittsburgh, Pa., CA. Approx. $6,000,000. 61 COKE OVENS, 4,200 ton capacity, CLAIRTON, PA. U. S. Steel Co., 431 5 Ave., Pittsburgh, Pa.

H. T. Osborn Co., 631 12 St., Franklin, Pa., CA. Approx. $180,000. 1 story, 90x330 ft. WAREHOUSE, CREIGHTON, PA. Pittsburgh Plate Glass Co., Grant Bldg., Pittsburgh, Pa.

Henry Shenk Co., 1115 Sassafras St., Erie, Pa., CA. Approx. $500,000. 3 story, 86x325 ft., brick, stone parochial HIGH SCHOOL, ERIE, PA. Villa Maria College 829 W. 8 St., Erie, Pa. CD 7/28/50.

▲ **Henry Busse Co.**, 112 Wabash St., Pittsburgh, Pa., CA. Approx. $1,135,374, 1 story, bsmnt., T-shaped 188x244 ft., brick, concrete, steel, memorial HOSPITAL, MT. LEBANON, PA. St. Clair Hospital, Mt. Lebanon, Pa. Bids Aug. 13. CD 8/24, under LB.

George M. Seaman & Co., 5145 Liberty Ave., Pittsburgh, Pa., LB. $600,000. 4 story, bsmnt., L-shaped brick, concrete HOSPITAL and HOME, MT. LEBANON, PA. Methodist Hospital & Home for Aged, Mt. Lebanon, Pittsburgh, Pa. Sterling & Wolfe, 119 E. Montgomery St., Pittsburgh, Pa., archts.

Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Pa., Owner builds. Approx. $650,000. 1 story, 100x134x490 ft., concrete block, steel, paint and finishing PLANT, PITTSBURGH, PA.

Unkefer Bros. Constr. Co., 516 Bessemer Bldg., Pittsburgh, Pa., CA. Approx. $375,000. PLAYHOUSE alteration from synagogue, PITTSBURGH, PA. Pittsburgh Playhouse, 222 Craft Ave., Pittsburgh, Pa. CD 10/21/48.

▲ **Wilcox Constr. Co.**, 29-28, 41 St., Long Island City, N. Y., **James McHugh Co., Inc.**, 449 S. Park Ave., Chicago, Ill., and **Crump, Inc.**, 4031 Bigelow Blvd., Pittsburgh, Pa., LB. $1,375,000, parking GARAGE, Contr. B-1; LB. $1,925,000, parking GARAGE, Contr. F-1, PITTSBURGH, PA. Pittsburgh Parking Auth., City County Bldg., Pittsburgh, Pa. Hoffman & Crumpton, Century Bldg., Pittsburgh, Pa., archts. CD 5/16/49, under unclassified.

O'Connor Machine Co., Sheffield, Pa., Owner Builds. Approx. $85,000. 1 story, 60x200 ft., concrete block FACTORY, SHEFFIELD, PA.

Crump, Inc., 4031 Bigelow Blvd., Pittsburgh, Pa., CA. Approx. $90,000. 1 story, steel FOUNDRY addn., VERONA, PA. American Steel Foundry, 410 N Michigan St., Chicago, Ill.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **N. C., Winston-Salem**—SECURITY FENCE—B.A. 9/25—Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, S. C., security fence exten., NOY 21925. CD 8/22.

† **Fla., Cocoa**—LIGHTING—B.A. About 9/26—U. S. Eng., P. O. Box 4979, Jacksonville, airfield lighting, Air Force Missile Test Center, Patrick Air Force Base, Brevard Co., Serial No. Eng. 08-123-52-37. CD 4/4.

† **Fla., Cocoa**—BASE ROADS—B.A. 9/27—U. S. Eng., 575 Riverside Ave., Jacksonville, base roads, parking areas Air Force Missile Test Center, Patrick Air Force Base, Eng 08-123-52-33. Plans deposit $10. CD 9/5.

BIDS ASKED—BUILDINGS

Ga., Columbus—BLDG.—B.A. About 10/1—Y.M.C.A., c/o Lockwood & Biggers Assocs., archts., Flower Bldg., Columbus, Ga., Y.M.C.A. Bldg., $500,000. CD 1/22/48.

La., New Orleans—SCHOOL—B.A. about 10/1—Orleans Parish School Bd., 703 Carondelet St., McDonough 36 School, $900,000.

Ala., Russellville—HOUSING—B.A. 10/1—Russellville Housing Auth., c/o Turner & Northington, archts., Florence, 75 units housing, Proj. ALA 60-1 and ALA 60-2. $600,000. CD 7/20.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **J. A. Jones Constr. Co.**, 209 W. 4 St., Charlotte, N. C., L.B. $1,101,242, power house at Philpott dam on Smith River, VIRGINIA. U. S. Eng., foot of Front St., Norfolk, Va. Bids Aug. 29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **H. K. Ferguson Co.**, 1783 E. 11 St., Cleveland, O. CA. Approx. $1,200,000. design and construct 1 and 2 story, 75,000 sq. ft., rein.-con., steel, WAREHOUSE, PARKERSBURG, W. VA. Corning Glass Co., Walnut St., Corning, N. Y.

Cowart & Gonzalez, 217 W. Church St., Jacksonville, Fla. Owner Builds. $450,000. HOUSING to be known as Cedar Shores, Suburb of JACKSONVILLE, FLA.

MIDDLE WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

ILLINOIS—State Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield.
Superior Concrete Constr. Co., 5113 Woodlawn Ave., Chicago 15, Ill., LB $61,871, repairing grade separation bridge, 13. No. 98, Cook Co. Bids Aug. 24. CD 8/17.

MICHIGAN—State Hy. Comn., 213 S. Capitol Ave., Lansing.
Chas. J. Rogers, Inc., 14836 Grand River St., Detroit, Mich. and **Cooke Contg. Co.**, 1116 Penobscot Bldg., Detroit, Mich. CA $884,775, est. $850,000, b. conc. 0.556 mi. incl. relocation, light, power and signal facilities, John C. Lodge Expressway UI 82-127, C62 (UI 404 35), Wayne Co. Bids Aug. 15. CD 8/22, under LB.

(Continued on page 79)

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
B.A. Bids Asked
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

OSGOOD

Clamshell is "Kingpin" at prosperous concrete batching plant

At the profitable and efficiently operated concrete batching plant of Sam Braen & Co., Ridgefield, New Jersey, an OSGOOD 1¾ cu. yd. Clamshell has been selected as the "kingpin" in the operational set-up.

In addition to keeping materials flowing into the plant which puts out 300 yards of concrete per day, the OSGOOD also stockpiles sand brought in by trucks at the rate of 300 to 400 yards daily. The machine has an 80-foot boom and is equipped with 1¾-yard clamshell—converts quickly to dragline or crane.

Smoothest operation since steam

OSGOOD Air Control with famous Air Cushion Clutch eliminates jerking and grabbing—gives steam-like smoothness of operation. All primary motions, such as swinging, traveling, steering and hoisting are air-activated by means of levers conveniently located for the operator. Response is instant and accurate and operator retains "feel" of the load. There's no down time for frequent time-consuming clutch adjustments either, because OSGOOD Air Cushion Clutches automatically compensate for gradual wear of the friction discs.

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Equipment designed with YOUR profit in mind

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The OSGOOD COMPANY

MARION, OHIO

AFFILIATED WITH THE GENERAL EXCAVATOR CO.

POWER SHOVELS, CRANES
DRAGLINES, CLAMSHELLS
PILE DRIVERS & BACK HOES
CRAWLERS & MOBILCRANES
DIESEL, GASOLINE OR
ELECTRIC POWERED
CAPACITIES ⅜ TO 2½ CU. YD.

UNIVERSAL

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When people are counting on you to meet vital construction schedules . . . you've got to have material from a convenient source. Universal has a reputation for delivering material which is right the first time . . . plus the equipment and facilities to give you concrete pipe when you need it . . . where you need it. 23 major plants, located in primary building areas, gives you a source of supply where you want it!

ATTENTION CONTRACTORS DOING BUSINESS ABROAD! Universal can supply you with pipe making machines and all necessary equipment for making pipe. Details on request.

Highway Cribbing Wall

Site-Cast Equipment

Culvert Pipe Construction

Flat-base Culvert

Package Bridge

Sewer Pipe Project

UNIVERSAL CONCRETE PIPE CO.

Home Office: **297 S. HIGH ST., COLUMBUS 15, OHIO**

UNIVERSAL CONCRETE PIPE CO. PLANTS—Decatur and Dothan, Ala.; Tampa and Miami, Fla.; Atlanta, Ga.; Kenvil, N. J.; Bing-hampton, Port Washington, Rochester and Syracuse, N. Y.; Columbus and Zanesville, Ohio; Norristown and Pittsburgh, Pa.; Nashville, Tenn.; Clarksburg, New Martinsville and Wheeling, W. Va. UNIVERSAL AFFILIATES—Concrete Pipe Co. of Ohio with plants in Cleveland, Youngstown and Sandusky, Ohio and Erie, Pa.; Florida Concrete Pipe Co., Ocala, Fla.; Dixie Concrete Pipe Co., Louisville, Ky.

Say, Mr. Contractor,

YOU FORGOT TO TAKE YOUR SHOVEL WITH YOU!

How many shovels, dozers, compressors, trucks, etc., did you leave on your last job? None, we'll bet. But if you put up temporary housing, chances are you left your investment at the jobsite. Put a stop to this expensive drain on your profits. Put modern, profitable housing to work for you. Take your comfortable, up-to-the minute housing with you to every job.

McNary Dam Contractors recently purchased hundreds of Spartan Aircraft Trailercoaches for their job. We'll bet Spartan Housing won't be left at the jobsite when the other equipment is moved out. It will be moved to the next job, and the next job and the next job — reducing the cost of housing each time.

Investigate today — write for complete descriptive literature on Spartan Trailercoaches — fine homes for you and your employees — equipped with as many as two full size bedrooms, electric refrigeration, large cook-stove, comfortable lounge, complete bathroom with flush toilet, central heating systems, air-conditioning, fine furniture plus aircraft type construction for a lifetime of service.

SPARTAN AIRCRAFT COMPANY
1900 N. Sheridan Road
Tulsa, Oklahoma

(Continued from page 76)

BUILDINGS

LOW BIDS AND CONTRACTS

Mulligan-Case Constr. Co., 496 Hutton Pl., Columbus, O. C.A. Approx. **$500,000.** 3 story receiving and CLASSIFICATION CENTER for Bureau of Juvenile Research, 2280 W. Broad St., COLUMBUS, O. Dpt. P. Wks., S. O. Linzel dir., Columbus, O. Bids July 10. CD 6/20.

Peter Becker, 602 Detroit St., Hammond, Ind. CA **$84,000**, 11,000 sq. ft. FACTORY, EAST CHICAGO, IND. Gannon Sheet Metal Works, 414 Chicago Ave., East Chicago, Ind. Awarded Sept. 4.

Joseph T. Carp, Inc., 5640 North West Hy., Chicago, Ill. CA **$100,000**, 1 story, 12,000 sq. ft. FACTORY addn., CHICAGO, ILL. General Porcelain Enameling Co., 4105 W. Schubert St., Chicago, Ill. J. A. Scanlon, 2323 Pioneer St., Evanston, Ill., engr. Awarded Aug. 31.

▲ **Sherman Olsen, Inc.**, 600 W. Jackson St., Chicago 6, Ill. CA **$2,000,000**, printing and map making PLANT, N. Central Park Ave. and Washington St., SKOKIE, ILL. Rand McNally & Co., 534 S. Clark St., Chicago 5, Ill. Graham Anderson Probst & White, 80 E. Jackson St., Chicago 4, Ill., archts. Awarded Aug. 1.

Continental Constr. Co., 340 N. Central Ave., Chicago, Ill. CA **$400,000**, 1 story, 50,000 sq. ft. FACTORY, 9203 W. King St., FRANKLIN PARK, ILL. Just Mfg. Co., 4610 W. 21 St., Cicero, Ill. F. W. Langhenrich, 4551 W. Washington Blvd., Chicago, Ill., archt. Awarded Aug. 30.

▲ **Selzer-Ornst Co.**, 6222 W. State St., Milwaukee, Wis. CA **$1,000,000**, 3 story, 100,000 sq. ft. electric switches FACTORY addn., MILWAUKEE, WIS. Cutler-Hammer, Inc., 315 N. 2 St., Milwaukee 3, Wis. Awarded Aug. 28. CD 8/13.

Hutter Constr. Co., 134 Western Ave., Fond du Lac, Wis. CA **$100,000**, PLANT for sorting, treating and storing seed, RANDOLPH, WIS. Jung Seed Co., Randalph, Wis. Fred Dolke, 189 W. Madison St., Chicago 3, Ill., archt. Awarded Aug. 29. CD 9/27/45.

▲ **Alstrom Constr. Co.**, 22 Western Ave., Muskegon, Mich. CA **$1,745,380.** 2 story, bsmnt., brick, steel, concrete High SCHOOL, GRAND HAVEN, MICH. City, Bd. Educ., Grand Haven, Mich. CD 8/15, under LB.

Wright Home Builders, Inc., 1027 St. John St., Lincoln Park, Mich. Owner Builds. **$500,000.** 60 single HOUSES, Cloverlawn, Ford, St. John, LeBlanc, Highland and Riverbank, LINCOLN PARK, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Ia., Bloomfield—B.A. 9/25—City, elevated steel water tank, piping, $85,000. Hall Eng. Co., Centerville, engr.

Kan., Wichita—ELECTRONICS BLDG.—B.A. 9/25—Boeing Airplane Co., Wichita Div., Boeing Airplane Co. Plant 2, Personnel Bldg. 3 story, 58x324 ft, masonry electronics bldg., Air Force Plant 13. Plans deposit $25, Wilson & Co., 223 N. Santa Fe St., Salina, engrs.

† **Nebraska**—SWITCHBOARD—B.A. 9/25—Bureau Reclamation, Dpt. Interior, P. O. Box 280, Casper, Wyo., furnishing control and relay switchboard for Chadron sub-station, Transmission Div., Missouri River Basin Proj. Inv. No. 703S-195.

† **S. D., Rapid City**—SURVEILLANCE and RADIO FACILITIES—B.A. 9/26—U. S. Eng., 1709 Jackson St., Omaha, Neb., construct GCA, surveillance and radio facilities at Rapid City Air Force Base, Inv. 52-11(SP) near Weaver. CD 3/20.

† **South Dakota**—B.A. 9/28—U. S. Eng., 1709 Jackson St., Omaha, Neb., outdoor switchgear and station service equip., Fort Randall Dam Proj. Inv. 52-19. CD 5/25/44.

† **Tex., Waco**—FACILITIES—B.A. 9/28—U. S. Eng., 1127 Texas and Pacific Bldg., Fort Worth, water lines, rehabilitation existing lines, $45,000; sanitary sewers and rehabilitation existing lines, $65,000; natural gas lines, rehabilitation existing lines, $60,000, addnl. area of Connally Air Force Base. CD 7/18, under LB.

† **Tex., Mineral Wells**—PARKING AREAS—B.A. 10/2—U. S. Eng., 1127 Texas and Pacific Bldg., Fort Worth, heavy equip. yard, parking areas, etc. incl. approx. 115,000 sq. yds., concrete, asph. and gravel paving, Wolters Air Force Base. Approx. $400,000. CD 7/16.

BIDS ASKED—BUILDINGS

Tex., College Station—AGRONOMY and HORTICULTURE—B.A. 9/28—Agricultural & Mechanical College of Texas, College Station, agronomy and horticulture bldg. units, $126,000. Plans deposit $100. Bids 4/11 cancelled. CD 4/17, under LB.

▲ **Colo., Greeley**—MUSIC, THEATER, etc.—B.A. 10/5—Colorado State College of Education, Greeley, 2 story, bsmnt., X-shaped, music, theater and administration bldg., $1,150,000. F. W. Ireland, Greeley, engr. CD 11/8.

SOON LETS CONTRACT—BUILDINGS

Mo., St. Louis—HOUSE OF PHILOSOPHY—Missouri Province, Society of Jesus, Very Rev. Daniel H. Conway, S.J., provincial, 4511 W. Pine Blvd., Zone 8, soon lets contract 5 story, ground floor, 43x269 ft., 3 story, ground floor, 57x92 ft. wing, 2 story, ground floor, 59x110 ft. wing, brick, rein.-con. stone House of Philosophy, Southwest W. Pine and Spring Aves. Leo A. Daly Co., 1725 Ambassador Bldg., 411 N. 7 St., Zone 1, archts. CD 8/9.

Mo., University City (St. Louis 14, P.O.)—FACTORY—Mid-Continent Spring Co., 6315 Maple Ave., St. Louis, Zone 14, soon lets contract 1 story, 81x123 ft., brick, concrete blocks factory addn., Syl G. Schmidt & Assoc., 1819 Railway Exchange Bldg., 611 Olive St., St. Louis, Zone 1, archts. and engrs. CD 7/23.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Fuel Economy Engineering Co.**, 508 New York Bldg., St. Paul, Minn. LB **$276,000.** POL facilities incl. 5,000 bbl. fuel storage tank, pipe lines, etc. at Duluth Air Force Base, DULUTH, MINN. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Aug. 3. CD 7/25.

Everds Bros., Algona, Ia. CA **$77,940.** Sect. 1, county road surf., ALGONA, IA. Kossuth Co., Algona, Ia. Bids Aug. 13.

Jackson Co., Court House, Kansas City 6, Mo. rejected bids Aug. 20, repaving 0.8 mi. Lake City-Buckner Rd. from US 24 to County Road 205, Buckner, KANSAS CITY, MO. LB **$76,110.** Will re-advertise. CD 8/30, under LB.

George L. Cousins Contg. Co., 875 N. Skinker Blvd., St. Louis 5, Mo. LB **$46,893.** rein.-con. seawall 1 ft. thick to height 5 ft. above ground level, 700 ft. total length at Howard's Bend Water Works Plant, on Missouri River, ST. LOUIS, MO. City, Frank J. McDevitt, pres. Bd. Pub. Service, 304 City Hall, 14 and Market Sts., St. Louis 3, Mo. Bids Sept. 4. CD 8/4.

Deckert Corp., 53 W. Jackson Blvd. 4, Chicago, Ill. LB **$62,700**, est. $60,000. rehabilitation deck of portion western railroad approach, portion of eastern railroad approach Douglas MacArthur Bridge over Mississippi River, ST. LOUIS, MO. City, Bd. Pub. Service, Frank F. McDevitt, pres. 304 City Hall, 12 and Market Sts., St. Louis 3, Mo. Bids Sept. 4. CD 8/9.

† **A. G. Sherwood Constr. Co.**, Independence, Kan. LB **$49,620.** emergency levee repairs on Kansas River, near Lawrence, Inv. 52-27, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City, Mo. Bids Aug. 31. CD 8/23.

† **Tobins-Barcus Constr. Co.**, 3700 Rainbow St., Kansas City, Kan. LB **$83,330.** emergency work for control of flood control facilities in Central Industrial Dist., KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City, Mo. Bids Aug. 31.

▲† **M. E. Gillioz**, Monett, Mo., CA. **$1,126,062**, est. $1,181,984. relocation of M-K-T railway tracks at Fort Gibson Dam, Grand Neosho River Watershed, Inv. No. CIVENG 45-066-52-5, OKLAHOMA. U. S. Eng., Box 61, Tulsa, Okla. Bids Aug. 21, awarded Aug. 31. CD 8/28, under LB.

† **Anderson Constr. Co.**, Amote Bldg., McAlester, OKLA., CA. **$189,498**, est. $200,000. resurf., grav. roads in depot area at Naval Ammunition Depot, McALESTER, OKLA., Bureau Yards & Docks Annex, Navy Dpt., Arlington, Va., Bailey & Bozalis, Colcord Bldg., Oklahoma City, Okla., archts. Awarded Aug. 31.

W. E. Steelman, 2800 N. E. 4 St., Oklahoma City, Okla., CA. **$68,718**, est. $69,658, c. conc. pavement Dist. 1150, OKLAHOMA CITY, OKLA., City, City Hall, Oklahoma City, Okla., H. E. Chase, c/o owner, engr. Awarded Aug. 29. CD 5/15/50.

† **Pacific Electric Mfg. Corp.**, 5815 3 St., San Francisco, Calif. CA **$38,010.** transmission div., one 115,000 volt circuit breaker, three 115,000 volt horn gap switches for temporary Garrison sub-station, Missouri River Basin Proj. Spec. 600S-72, MONTANA. Bureau Reclamation, Dpt. Interior, Billings, Mont. Bids Aug. 14, awarded Aug. 22. CD 7/24.

BUILDINGS

LOW BIDS AND CONTRACTS

H. S. Holtze Constr. Co., 2121 E. 4 St., Sioux City, Ia., CA. **$531,800**, general contract, 4 story bsmnt., HOSPITAL addn., SIOUX CITY, IA. St. Vincent Hospital, Sister Mary Raphael, chn. Bldg. Comm., 724 Jones St., Sioux City, Ia. Bids Aug. 28. CD 8/28.

▲ **Town School Dist. of Clayton Bd. Educ.**, John L. Bracken, supt. Schools, 7500 Maryland Ave., Clayton, Mo., cancelled bids to have been opened Sept. 1, brick, concrete, steel HIGH SCHOOL incl. cafeteria, gymnasium, auditorium and theater bldg., industrial arts and shop bldg., garage, homemaking and domestic science bldg., heating plant, CLAYTON (ST. LOUIS 5, P. O.) MO. Est. **$1,800,000.** Will re-advertise in November. CD 5/11.

E. A. Brunson Constr. Co., 4052 Forest Park Blvd., St. Louis 8, Mo. CA. two 1 story, 40x140 ft., one 1 story, 40x88 ft., one 1 story, 40x112 ft., rein.-con. metal quonset-type WAREHOUSES for automotive supplies, ST. LOUIS, MO. Sidney Weber, Inc., 2218 Locust St., St. Louis 3, Mo.

▲ **Platte Valley Building & Development Corp.**, Sidney, Neb., Owner Builds. Approx. **$1,000,000.** 100 prefabricated HOUSES, SIDNEY, NEB.

Harmon Constr. Co., 100 S. Indiana St., Oklahoma City 4, Okla., CA. Approx. **$400,000.** remodel the Home State Theatre into an OFFICE, OKLAHOMA CITY, OKLA. Home State Insurance Co., Home State Life Bldg., Oklahoma City 2, Okla., Coston & Frankfurt, Apco Tower, Oklahoma City, Okla., archts. Awarded Sept. 5.

Brown Constr. Co., 5105 Avenue L, Houston, Tex., LB. **$953,849**, est. $375,000. San Jacinto HIGH SCHOOL alterations, addns., HOUSTON, TEX. Houston Independent School Dist., 1600 Washington St., Houston, Tex. Bids Aug. 31. CD 8/29.

Tidmore Constr. Co., 1902 Avenue M, Lubbock, Tex., CA. **$642,443.** 2 story, brick, tile R. W. Matthews Junior HIGH SCHOOL, LUBBOCK, TEX. Lubbock Independent School Dist., c/o C. G. Tatum, supt., Lubbock, Tex. Bids Aug. 28, awarded Sept. 4. CD 9/5, under LB.

Gianotti-Ramsey Constr. Co., 1023 Basse Rd., San Antonio, Tex. LB **$368,375.** SCHOOL, SAN ANTONIO, TEX. St. Marys Parochial School, Most Rev. Rob. E. Lucey, 230 Dwyer Ave., San Antonio, Tex. Bids Aug. 24. CD 8/15.

▲ **Cape County Homes, Inc.**, Memphis, Tenn., CA. **$3,660,000.** construct, manage, finance, 500 HOUSING units, at Connally Air Force Base, WACO, TEX. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex., Bids Aug. 30, awarded Sept. 5. CD 9/6, under LB.

▲ **Harsh Investment Corp.**, 374 S W Morrison St., Portland, Ore. LB **$3,286,000**, est. $3,839,911. construct, manage, finance 400 HOUSES, Great Falls Air Force Base, No. 093-80002-Air-1, GREAT FALLS, MONT. U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, Wash. Bids Sept. 5. CD 8/8.

▲† **Collier Electric Co.**, 700 W. 13 Ave., Denver, Colo. CA Est. **$800,000-$1,000,000**, electrical constr. work at Rock Flats PLANT, **McCarty, Johnson, Davis & Bell**, 944 Osage, Denver, Colo., CA. est. **$2,000,000**, mechanical constr. work at Rocky Flates PLANT, BOULDER, COLO. Atomic Energy Comn., Contract Bd., Los Alamos, N. M. The Austin Co., 1300 Glenarm Pl., Denver, Colo., engrs.

▲ **A. A. & E. B. Jones**, 682 Wyandot St., Denver, Colo. LB **$1,023,000**, est. $300,000. 2 story, brick Louise A. Merrill Junior High SCHOOL, DENVER, COLO. School Dist. 1, 414 14 St., Denver, Colo. T. H. Buell & Co., 730 14 St., Denver, Colo., engrs. Bids Aug. 29.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

Wash., Granger—B.A. 9/27—Town, Town Hall, trunk and lateral sewers and sewage treatment plant, high rate trickling filter or contact aerator type, $147,000. Plans deposit $35. G. D. Hall & Assocs., Larson Bldg., Yakima, Wash., engrs. CD 4/6.

† **California**—B.A. 10/2—Bureau Reclamation, Dpt. Interior, Bldg. 10A, Denver Federal Center, Denver, Colo., rein.-con. pipe for Stone Corral Irrigation District, Friant-Kern Canal Distribution System, Central Valley Proj., Spec. DS-3534; precast concrete pipe for Stone Corral Irrigation District, Friant-Kern Canal Distribution System, Central Valley Proj., Spec. DS-3535. L. N. McClellan, ch. engr.

† **California**—B.A. 10/2—U. S. Eng., Wright Bldg., Sacramento, constr. Isabella Dam. Plans deposit $100.

† **California**—B.A. 10/2—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo., earthwork, pipe lines, structures, laterals 59.8S, 61.1S, 62.8W and 64.5W and sublaterals, Stone Coral Irrigation Dist., Friant-Kern Canal Distr. Sys., Central Valley Proj., 10 mi. southeast of Dinuba, Spec. DC 3533; adv. ENG 9/20.

Calif., Fresno—B.A. 10/2—State Div. Architecture, P. Wks. Bldg., Sacramento, water and sewage disposal sys. at Fresno State College. Plans deposit $25.

† **Washington**—TURBINE GOVERNORS—B.A. 10/2—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, three 19,600 hp. hydraulic turbine governors for Albeni Falls Dam, Inv., Civeng 52-1. Extended date. CD 7/12.

BIDS ASKED —BUILDINGS

▲† **Wash., Richland**—RADIOMETALURGY—B.A. 10/3—Ox General Electric Co., Richland, prime contractor, to AEC for operation at Hanford Works, 21,000 sq. ft. radiometalurgy bldg. at Hamford Works and 51,200 sq. ft. pile technology bldg., Approx. $1,000,000. Plans deposit $50. CD 8/14, under LB.

Utah, Ironton—OFFICE—Bids Asked—Pacific States C.I. Pipe Co., Ironton, office. $400,000. E. L. Allen, c/o owner, ch. engr.

SOON LETS CONTRACT—BUILDINGS

▲ **Calif., Santa Cruz**—FACTORY—Wm. Wrigley Jr. Co., 410 N. Michigan Ave., Chicago, Ill., soon lets contract chewing gum factory, Main and West Cliff Dr. **$3,000,000.** Victor L. Charn, 1744 W. Rice St., Chicago, Ill., archt. Extended date. CD 7/31.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Grafe-Callahan Constr. Co.**, 1 National Bank Bldg., Dallas, Tex., CA. **$2,731,882**, completion of Davis Dam spillway stilling basin, Davis Dam Proj., Spec. DC-3413, ARIZONA. Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo. Bids Aug. 14, awarded Sept. 4. CD 8/21, under LB.

Stateside Constr. Co., 1912 Minor Ave., Seattle, Wash. LB **$94,435**, 4,500 lin. ft. 18 and 24 in. trunk sewers in 30 Ave., LONGVIEW, WASH. City, City Hall, Longview, Wash. Bids Aug. 31. CD 8/24.

Construction Engineers & Contractors, 801 Portacoma Rd., Tacoma, Wash. LB **$172,499**, Dock St. Sewage Pumping Station, TACOMA, WASH. City, City Hall, Tacoma, Wash. Bids Sept. 4. CD 8/28.

Hahn Electric Co., Wenatchee, Wash. LB **$96,000**, 16 Mi. 33 kv wood-pole transmission line, WENATCHEE, WASH. Chelan Co. Public Utility Dist., Wenatchee, Wash.

▲† **Gunderson Bros. Eng. Corp.**, 4700 N.W. Front St., Portland, Ore. CA **$1,566,354**, spillway gates, appurtenances for McNary Dam, Inv. No. CIVENG 45-164-51-69, OREGON. U. S. Eng., Bldg. 602, City-County

Angeles, Walla Walla, Wash. Bids Aug. 9, awarded Aug. 21. CD 8/14, under LB.

▲ **CALIFORNIA**—State Div. Hys., Los Angeles.
Griffith Co., 1016 S. Broadway, Los Angeles, Calif., LB $2,361,815, grading, paving 1.7 mi., constr. 4 bridges and pedestrian undercrossing on Ramona Freeway between 8 St. and 1 mi. east of Jackson Ave., Los Angeles Co. Bids Sept. 6. CD 8/15.
CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento.
rejected bids Aug. 22, rein.-con. slab bridge and 0.1 mi. grade, etc. across Los Berros Creek, San Luis, Obispo Co. LB $63,876. CD 8/30, under LB.
CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento.
Frederickson & Watson Constr. Co., 1259 65 St., Oakland, Calif. CA $879,444, 1.4 mi. grade, surf., construct railroad undercrossing near Scotia, Humboldt Co. Bids Aug. 8, awarded Aug. 28. CD 8/17, under LB.
† **Pittsburgh-Des Moines Steel Co.**, 643 Alviso Rd., Santa Clara, Calif. LB $91,574, supersonic blowdown wind tunnel, Spec. A-6637, MOFFETT FIELD, CALIF. National Advisory Committee for Aeronautics, Ames Aeronautical Laboratory, Moffet Field, Calif.
Beason & Taylor, 1010 Parkway Dr., El Monte, Calif. CA $77,093, sanitary sewers, in Rossi-Rico St. area and Laurel Park Addn. 1, SALINAS, CALIF. City Hall, Salinas, Calif. Bids Aug. 27, awarded Aug. 28. CD 8/17.

BUILDINGS

LOW BIDS AND CONTRACTS

Allied Constr. Co., P. O. Box 1044, Idaho Falls, Idaho. LB $449,775, construct, manage, finance, 53 Wherry HOUSING units at Utah General Depot, OGDEN, UTAH. U. S. Eng., 74 New Montgomery St., San Francisco, Calif. Bids Aug. 30. CD 8/16.
▲ **L. H. Hoffman Co.**, 715 S.W. Columbia Blvd., Portland, Ore., CA, $20,000,000, rein.-con. buildings for pulp MILL, EVERETT, WASH. Weyerhaeuser Timber Co., Tacoma Bldg., Tacoma, Wash. G. F. Alcorn, c/o owner, engr. CD 3/2.
Cawdrey & Verna, Central Bldg., Seattle 4, Wash. CA $95,000 40x209 ft., frame FREIGHT TERMINAL addn., SEATTLE, WASH. Los Angeles-Seattle Motor Express, Inc., 3200 6 Ave. S., Seattle, Wash.
Th- **Austin Co.**, 16112 Euclid St., Cleveland, O. CA $900,000, design and construct 1 story, 200x300 ft., steel concrete jig erection BUILDING, SEATTLE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle, Wash. CD 9/6.
Carlton Builders, 246 S. Robertson Blvd., Beverly Hills, Calif., CA, $642,600, 60 frame, stucco DWELLINGS Harley, Noren, Rives, and Richlen Aves., DOWNEY, CALIF. Hirsh-Edmonds Bldg. Co., 246 Robertson Blvd., Beverly Hills, Calif. Major Drafting Service, 11015 Paramount St., Downey, Calif., archt.
Shaw Constr. Co., 8634 Firestone Blvd., Downey, Calif., CA $955,300, 95 frame, stucco DWELLINGS, Gridley, Harce and Clarkman Sts., DOWNEY, CALIF. J. & S. Leigh, Inc., J. D. Develop Co., M. & S. Leigh, Inc., Tryee Inv. Co., Hanser-Whitney Co., Inc., 8634 Firestone Blvd., Downey, Calif.
George Lauer, 599 Patton Ave., San Jose, Calif., LB $404,672, Horace Cureton Elementary SCHOOL, SAN JOSE, CALIF. Alum Rock Union Elementary School Dist., 149 McCreery Ave., San Jose, Calif. Bids Aug. 28.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska, Ketchikan**—B.A. 10/3—Alaska P. Wks., Dpt. Interior, Juneau, grading, widen. surf., sidewalks, curbs, gutters, drains and retaining wall on 3 Ave., Proj. 50-A-64. $390,000. Plans deposit $25. L. D. Hubbard, city engr. CD 2/2.
† **Alaska**—FIRE STATION—B.A. 10/9—U. S. Eng., (APO 942, c/o PM, Seattle, Wash.) Anchorage, crash and structural fire station at Elelson Air Force Base, Inv. 595-507-52-4. Plans deposit $25.

BIDS ASKED—BUILDINGS

† **Alaska**—GENERATORS—B.A. 10/2—Bureau Reclamation, Dpt. Interior, Bldg. 1 A, Denver Federal Center, Denver, Colo., furnishing, installing two 16,667 kva. generators for Eklutna Power Plant, Spec. DC-3536, Eklutna Proj.
▲† **Alaska, Bethel**—HOSPITAL—B.A. 10/3—Bureau Indian Affairs, Dpt. Interior, Interior Bldg., 19 and C Sts., Wash. 25, D. C. 270x275 ft. steel hospital; 83x126 ft. service bldg., 158x178 ft. 2 story quarters bldg. and 58x162 ft. storage bldg. for Alaska Native Service, ANS Proj. 501-245. $3,500,000. Foss, Malcolm & Olsen, Juneau, archts. CD 5/7.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **S. Bergeson**, Rt. 10, Box 971, Tacoma, Wash., LB $531,336, VHF communications stations at Anoon and Rodgers Point, Inv. No. 852-214, ALASKA. Civil Aeronautics Admin., Anchorage, Alaska. Bids Aug. 21. CD 8/1.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Que., St. Johns**—MESS HALL, BARRACK BLOCK—B.A. 9/25—M. P. McAndrew, engr., c/o Defence Constr. Ltd., 1247 Guy St., Montreal, one 500-man mess and one 250-man barrack block at R.C.A.F. Station, Job No. 1381. Approx. $1,200,000. Plans deposit $50.
P. E. I., Summerside—RAILWAY WHARF—B.A. 9/26—Secy Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., railway wharf reconstr., improvts. and dredging, 12,500 cu. yds. Class "A" material, 90,780 cu. yds. Class "B" material, steel sheet piling, creosoted piling and timber, rein.-con. filling about 90,750 cu. yds. freight shed, etc., Approx. $450,000. Plans deposit $50. R. Blais, c/o owner, engr. CD 3/19.

SOON LETS CONTRACT—BUILDINGS

Ont., Toronto—EXCHANGE—Bell Telephone Co. of Canada, 76 Adelaide St. W., soon lets contract 2 story, 80x80 ft., Hyland Exchange addn., Eglinton St., E. $200,000. Marani & Morris, 1250 Bay St., archts.
Ont., Toronto—EXCHANGE—Bell Telephone Co. of Canada, 76 Adelaide St., W., soon lets contract 2 bays, 2 stories each on 5th and 6 stories of existing bldg., incl. new 3 story bsmnt., and addnl. story on L-shaped bldg. for Kenwood-Lombard Exchange addn., Dufferin St. $450,000. Allward & Gouinlock, 57 Bloor St. W., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Standard Gravel & Surfacing of Canada Ltd., 5390 First St. W., Calgary, Alta., CA. Approx. $577,075, aerodrome repairs, CALGARY, ALTA. Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man. Bids Sept. 10. CD 8/30.
▲ **Campbell-Bennett, Ltd.**, 1718 W. 5 St., Vancouver, B. C. CA. $1,300,000. 200x8,600 ft., concrete runway at Vancouver Airport, VANCOUVER, B. C. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids Aug. 1, awarded Sept. 4. CD 7/23.
▲ **Tomlinsen Constr. Co., Ltd.**, 775 Queensway, Toronto 14, Ont., CA. $1,500,000 hardsurface runway extens. to 7,000 ft. by 150 ft., with parallel taxi strip and parking apron at Gimli Airport, GIMLI, MAN. Dept. Transport, Hunter Bldg., Ottawa, Ont. Bids Aug. 17. CD 8/7.
Yukon Constr. Co. Ltd., S-10105 108 Ave., Edmonton, Alta., CA. Approx. $82,000 hydrogen generator bldg., FORT SMITH, NORTHWEST TERRITORIES. Govt. Canada, Hunter Bldg., Ottawa, Ont.
Municipal Spraying & Contg. Ltd., 1350 Barrington St., Halifax, N. S., CA. $350,000. exten. runway, 150x8,000 ft. with parallel taxi strip at airport, GREENWOOD, N. S. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Awarded Sept. 4. CD 7/30.
Joseph S. Surette, Alma St., Yarmouth, N. S., CA. Approx. $46,785, wood decking jetty, YARMOUTH, N. S. Defence Constr. Ltd., 1032 Barrington St., Halifax, N. S. P. J. Mangan, c/o owner, engr.
McLaughlin Bros. Ltd., 21 Scott St., Ottawa, Ont., CA. $84,933, sewers, Foster Parkdale and Tyndall Sts., OTTAWA, ONT. Municipality, Ottawa, Ont.
QUEBEC—Province of Quebec, Quebec City.
Kelly Constr. Co., 30 Fenwick Ave., Montreal, Que., CA. 140,000. 3 span, 225 ft. rein.-con. bridge, 28 ft. wide, at Neuville, D. Desjardins, c/o owner, engr.
▲ **Simard et Frere Co. Ltd.**, Third Ave., E., Amos, Que., CA, Approx. $11,000,000-$15,000,000. dam and power house at Power Development at Rapids 2, Upper Ottawa River south of Cadillac, QUEBEC. Quebec Hydroelectric Power Comn., Quebec City, Que. CD 7/23.
Alex Duranceau, Ltd., 4 E. Notre Dame St., Montreal, CA. $74,335, paving, permanent sidewalks, Cumberland Ave.
Montpelier Const. Ltd., 4800 Iberville St., Montreal, Que., CA. $125,826, paving, permanent sidewalks, Plamondon Ave., Raoul St.
J. Accurso, Ltd., 150 St. Lawrence St., Montreal, Que., CA. $118,881, paving, permanent sidewalks, Fleury, Meunier Sts., Blvd. Olympia.
Miron Constr. Ltd., 2201 St. Michel Rd., Montreal, Que., CA. $83,232, permanent paving Desenclaves St., east of 12 Ave., east of Bourhoniere, east of Jeane Mance, CA. $136,317, paving, permanent sidewalks, 41 Ave. and Bedford Rd.
Montreal Dual Mix, Ltd., 6301 Park Ave., Montreal, Que. CA. $74,095, paving, permanent sidewalks, Second and 40 Ave.
H. J. O'Connell, Ltd., Canada Cement Bldg., Montreal, Que., CA. $120,249, paving, permanent sidewalks, Champagne Ave. and Tillemont St. MONTREAL, QUE. Municipality, Montreal, Que. Grand total $732,935.
Municipality, St. Anne de Monts, Que. Own Forces. Approx. $50,000. water sys., STE. ANNE DE MONTS, QUE. P. Warren, 38 Fahrigue St., Quebec City, Que., engr.
W. C. Wells Constr. Co. Ltd., 140 Ave. F., N., Saskatoon, Sask, CA. $500,000. runways exten., runways resurf. and taxi strips at Moose Jaw Airport, MOOSE JAW, SASK. Dpt. Transport, Hunter Bldg., Ottawa, Ont., Bids Aug. 22. Awarded Sept. 4. CD 8/16.

BUILDINGS

LOW BIDS AND CONTRACTS

Smith Bros. & Wilson Ltd., 1267 Richards St., Vancouver, B. C., CA, $460,087, constr. 1 rein.-con. cannon stop butt, 1 rein.-con. FHF-DF building and 2 frame 3 story 60-men officer's quarters. COMOX, B. C. Defence Constr. Ltd., 360 Homer St., Vancouver, B. C. Bids Aug. 7, Awarded Sept. 6. CD 8/1.
Marwell Constr. Co. Ltd., 410 Seymour St., Vancouver, B. C. CA. Approx. $366,840. 500-man MESS BLDG., VANCOUVER, B. C. Defence Constr. Ltd., 360 Homer St., Vancouver, B. C. J. L. Adams, c/o owner, engr.
▲ **Kenney Constr. Co. Ltd.**, Box 380, Yarmouth, N. S., LB, $1,125,000, est. $1,000,000. HOSPITAL addn, alterations, Morris St., HALIFAX, N. S. Children's Hospital Comn., Morris St., Halifax, N. S. Bids July 24. CD 7/3.
▲ **W. Robertson Ltd.**, 57 Bloor St. W., Toronto, Ont., LB. Approx. $700,000, FACTORY, Pharmacy and Eglinton Aves. E., TORONTO, ONT. John Inglis Co. Ltd., 14 Strachan Ave., Toronto, Ont. Allward & Gouinlock, 57 Bloor St. W., Toronto, Ont., archts.
Parkdale Development Corp., 630 Dorchester St. W., Montreal, Que. Owner Builds, $540,000, 60 COTTAGES, MacMahon, Coronation and Doherty Ave. between Western and Chester Aves., MONTREAL, QUE. Geo. Shubin, 1415 St. Mark St., Montreal, Que., archt. CD 6/5.
▲ **Komo Constr. Ltd.**, 1500 St. Valier St., Quebec City, Que., CA. Approx. $2,000,000. 9 story, rein.-con., brick, stone HOSPITAL annex, QUEBEC CITY, QUE. Corp. of Hospital Laval, Ste. Foye St., Quebec City, Que. R. Blanchete, 53 d'Antueil St., Quebec City, Que., archt. CD 8/30.
Magloire Couchan, Ltd., 311 DeLaSalle St., Quebec City, Que., CA. Approx. $300,180, central HEATING PLANT with equip., ST. HUBERT, QUE., Defence Constr. Ltd., 1247 Guy St., Montreal, Que., M. P. McAndrew, c/o owner, engr. Bids Aug. 1. CD 7/17.

PROPOSED PROJECTS

WATER SUPPLY

▲ **La., Shreveport**—City, City Hall, $1,750,000 bond election Oct. 2, WW imprvs.
R. I., Providence—City, City Clerk's office, City Hall, 21,000 ft. 24 and 30 in. c.i. or pressed pipe water main, Southeasterly Trunk water main from Dale Ave. in Cranston to Field's Point. $500,000. CD 4/15/46.
Tex., San Angelo—City, addnl. earthen water supply storage reservoirs, 125,000 acre ft., Spring Creek area Middle Concho River at Lake Nasworthy, $200,000; 100,000 acre ft. Middle Concho River, tributary of South Concho etc. Lake Nasworthy and Iron Co. line, $175,000; 90,000 acre ft., South Concho River between Lake Nasworthy and southern boundary of Tom Green Co., $150,000. CD 2/2/50.
Tex., Austin—Travis County Water Control & Imprv. Dist. 4, Court House, WW sys. extens. and imprvs. $225,000. The Marvin Turner Engineers, Nalle Bldg. Annex, consult. engrs. CD 8/20.
Tex., Dallas—Dallas County Water Control & Imprv. Dist. 6, Court House, water supply sys. and distr. lines, in southeast sect. $225,000. Homer A. Hunter, 4707 Greenville St., Dallas, consult. engr. CD 8/27.
Tex., Santa Rosa—Valley Acres Irrigation Dist., Santa Rosa, voted bonds, pumping unit, $200,000.

SEWERS, WASTE DISPOSAL

Ark., Fordyce—City, Ed Murray, mayor, voted $275,000 bonds, sewer extensions, imprvs., treatment plant, etc. E. G. Hampton, Fordyce, consult. engr. CD 3/22/50.
Conn., Pawcatuck—Town, Fire Dpt., Liberty St., sewage treatment plant, $118,900; sewerage facilities Northeastern Section, $60,000; sewerage facilities, Southern Section, $107,100; sewerage facilities, Central Section, $267,950. Gibbs & Hill, Inc., Pennsylvania Station, New York, N. Y., consult. engr.
Conn., Seymour—Town, Sewer Dpt., Town Hall, sewerage facilities, Derby Ave., $750,000. V. B. Clarke, 356 Main St., Ansonia, consult. engr. CD 3/31/44.
▲ **Ill., Berwyn**—City, City Hall, sewerage sys., Maple Ave., 26 to 28 Sts., Wrenonah Ave., Clarence and Euclid Aves., $1,600,000. Edwin Hancock Eng. Co., 1509 W. Jackson St., Chicago, Zone 8, consult. engr.
▲ **Mich., Detroit**—City, Glenn C. Richards, supt. Pub. Wks., relief sewer, concrete pipe, Conat-Mt. Elliott Sewer, $13,000,000; storm sewer, 8,000 ft. long, concrete 26 ft. circumference to extend along Ashland from Fox Creek to Essex into Connor, Essex Gravity Sewer $8,700,000; Ford-Southfield Intercepter Sewer $1,030,000; Schoolcraft Relief Sewer, $5,350,000; Ashland Relief Sewer, $6,900,000, Connor Intake alterations, $900,000, George R. Thompson, City Hall, city engr.
Neb., Fremont—City, primary sewage disposal plant, $696,000. C. A. Haskins Finance Bldg., Kansas City, Mo., consult. engr. CD 4/9.
▲ **O., Findlay**—City, $1,200,000 bond election Nov. 6, expand sewage treatment plant, sewage sys.

BRIDGES

▲† **Kansas**—Bureau Pub. Rds., Federal Office Bldg., Kansas City, Mo.
bridge on K-96.
bridge on K-17.
bridge on K-61, vicinity of Hutchinson, total cost $1,293,000.
2 bridges on U. S. Hy. 81.
2 bridges on U. S. Hy. K-96.
bridge on U. S. Hy. 54.
bridge on U. S. Hy. 42 vicinity of Wichita, total cost $1,607,000. Richard Tipton, c/o owner, bridge engr. R. C. Keeling, Topeka, state hy. engr.

(Continued on page 82)

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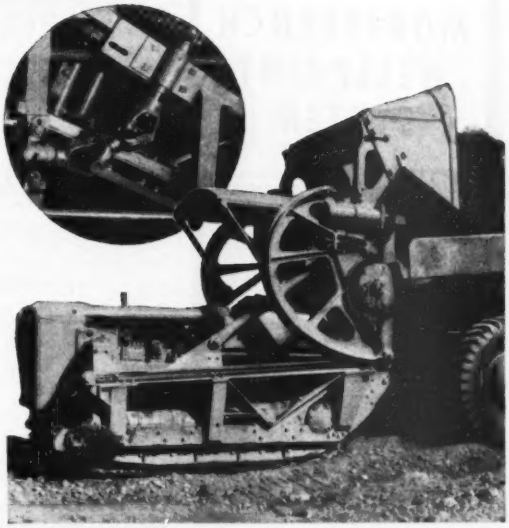

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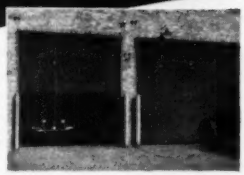

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(Continued from page 80)

WASHINGTON—State Hy. Dpt., Olympia
Clallam Co.—rebuild Bridge 9-A/2 over Dry Creek $35,000.
9-A/4 over Salt Creek, $23,400.
9-A/9 over Twin River, $45,000, on Secondary Hy. 9-A.
Columbia Co.—rebuild Bridge 3-H/102 on Secondary Hy. 3-H, $39,600.
Secondary State Hy. 3-L between junction with Primary Hy. 3 and King's Ranch, $24,000.
Cowlitz Co.—rebuild Speelyai Creek bridge 1-S/10 on Secondary Hy. 1-S, $36,160.
Grays Harbor Co.—rebuild Bridge 9/417 on Primary Highway 9 over Hansen creek, $26,000.
Bridge 9-MA/1 at Montesano south city limits, $44,500.
Bridge 9-MA/2 south of Montesano, $49,900.
rebuild bridge 9-C/16 on Secondary Hy. 9-C over Joe Creek, $239,000.
Bridge 9-C/21 on same highway over Copalis River, $69,000.
Culverts in Secondary Hy. 9-C to replace Bridges 9-C/17 $27,500.
9-C/18, $18,000.
9-C/19, $35,000.
Jefferson Co.—rebuild bridge 9/207 north on Brinnon on Primary Hy. 9, $30,100.
King Co.—rebuild May creek Bridge 2-A/107 on Secondary Hy. 2-A, $26,000.
Kitsap Co.—rebuild Black Creek bridge on Primary hy. 14 in Port Orchard, $267,200.
Kittitas Co.—rebuild bridge in Ellensburg on Secondary Hy. 3-M, $20,000.
Lewis Co.— Cora Bridge east, $197,000.
Mason Co.—rebuild Bridge 9-A-104 on Secondary Hy. 9-A, $19,700.
Pacific Co.—rebuild Johnson's Slough bridge 12-129 on Primary Hy. 12, $31,640;
Bridge 12-B/1 over Naselle River on Secondary Hy. 12-B, $19,700.
Pierce Co.—rebuild Bridge 14-B/103 over Minter Creek on Secondary Hy. 14-B, $70,300.
Bridge 5-E/14 on Secondary Hy 5-E, $29,950.
Bridge 14-B/10 on Secondary Hy. 14-B, $52,000.
asph. culvert on Secondary Hy. 14-B in Vaughn vicinity to replace bridge, $47,000.
Skagit Co.—Bridge 10/2 on Primary Hy. 10 over Loop Loop Creek, $30,500.
Bridge 17-A/5 on Secondary Hy. 17-A, $23,000.
Bridge 17-A/6 on same highway, $35,500.
Thurston Co.—rebuild bridge on Secondary Hy. 1-M, Tumwater-Rochester, $37,200.
Whatcom Co.—rebuild Nookechamp Creek bridge $21,000.
W. A. Bugge, state hy. dir.
Wash., Kennewick—City, City Hall, grade separation at Gum St. $200,000.

STREETS AND ROADS

MASSACHUSETTS—Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,
Barnstable Co.—widen county road for over 2,000 ft. to Nantucket Ferry and remove trees, Woods Hole, $500,000.
NEBRASKA—State Dpt. roads and Irrigation, Lincoln.
Hitchcock Co.—b. conc. surf. U. S. Hy. 34, $163,000.
F. H. Kliesch, c/o owner, state engr.
N. H., Manchester—City, Hy. Dpt., 227 Maple St., parking area, Chestnut and Lowell Sts. $175,000.
N. Y., Colesville—Town, imprv. 29.5 mi. roads, $146,945
▲ **PENNSYLVANIA**—State Hy. and Bridge Auth., North Office Bldg., Harrsburg,
Allegheny Co.—construct 2 mi. Penn-Lincoln Pkway, Bates to Grant Sts., in Pittsburgh, $13,200,000.
Beaver Co.—8 mi. of Routes 204 and 9 from Darlington to Ohio State line, $3,300,000.
Delaware Co.—3.83 mi. West Chester Pike from 69 St., Phila., westward, $1,100,000.
Indiana Co.—constr. 4.37 mi. U. S. Route 22 east of Blairsville, $2,600,000. S. P. Longstreet, c/o owner, ch. engr.
Tex., Bay City—voted bonds, street imprvs., paving $500,000. [illegible]
▲ **WASHINGTON**—State Hy. Dpt., Olympia,
Asotin Co.—ballast, surf., oil 0.5 mi. Primary State Hy. 3, in Clarkston, $90,000.
bit. macad. 5 mi. Asotin-Anatone, $180,000.
b. conc. in Clarkston, Diagonal St. from Bridge St. to 6 St., $115,000;
grading, surf. Rocky-Hollow-Anatone, $227,500;
Anatone-Field Springs State Park, $50,000.
Benton Co.—grading, surf., oil Secondary State Hy. 3-A, Byron-Prosser, $605,000.
grading, surf. Primary State Hy. 3, Richland Junction to Kennewick, $90,500.
Chelan Co.—grading, surf., oiling Primary Hy. 10 Chelan, $21,500;
grading, surf., and bridge on Primary Hy. 2, Monitor to Wenatchee River bridge, $238,300;
grading, surf. in Wenatchee, Wenatchee River bridge to Miller St., $176,000.
Clallam Co.—surf. Secondary Hy. 9-B, Quillayute Rd. to LaPush, $30,000.
b. conc. resurf. Secondary Hy. 9-A, in vicinity of East Twin River Bridge, $40,000.
Clark Co.—b. conc. Primary Hy. 8, Camas east and west, $50,000;
Secondary Hy. 1-T in Vancouver, Kauffman Ave. to Northern Pacific overcrossing, $18,500;
b. conc. re-topping and culvert extension on Vancouver to Salmon and Whipple Creek, $127,500.
in Washougal, $13,000.
Douglas Co.—grading, surf., oiling Primary Hy. 10, [illegible] Foster Creek, $100,500.
East Wenatchee to Rock Island, Section 1, $303,600
non-skid seal coat East Foster Creek to Leahy, $26,000.
non-skid seal coat Secondary Hy. 10-B, Leahy to head of Wallace Canyon, $27,700.
Ferry Co.—non-skid seal coat Primary Hy. 4, West Fork road junction to Alice Creek, $50,000.
grading, surf., oil Secondary Hy. 4-A, Republic-Curlew, $62,400.
Franklin Co.—non-skid seal coat Primary Hy. 11 Pasco-Sagemoor, $42,500.
grading, surf. Primary Hy. 3, Columbia River bridge to Lewis St. connection in Pasco, $363,000.
Grant Co.—grade, surf. and oil Primary Hy. 7, Winchester drainage canal northeast, $150,000.
Secondary Hy. 10-B, top of Wallace Canyon to Grand Coulee, $40,400.
grading Primary Hy. 18 to vicinity of Adams Co. line, $26,000.
Grays Harbor Co.—grading, ballast, surf., bit. penetration macad. Primary Hy. 9, Humptulips River bridge approach, $180,000.
grading, surf. paving and bridges on Primary Hy. 12, Pacific Co. line north 3.8 mi., $350,000.
b. conc. paving Primary Hy. 13, Pacific Co. line north, $480,000.
Island Co.—mixed seal coat, Secondary Hy. 1-D, Columbia Beach north, $36,000.
King Co.—Seattle-Lake Forest Park, $21,500 mixed seal coat Primary Hy. 5, Black Diamond-Krain, $15,500.
Secondary Highway 15-B, Carnation-Fall City, $21,000.
Kitsap Co.—b. conc. Primary Hy. 14 from junction with Primary Hy. 21 to Port Orchard, $98,500.
Klickitat Co.—b. conc. Primary Hy. 8, Binger vicinity, $37,000.
grading, ballast, surf., bit. pen. macad. Major Creek to Lyle grade, $63,500.
Centerville junction to Goldendale, $140,000.
Secondary Hy. 8-D, White Salmon-Rattlesnake Creek, $112,000.
Lewis Co.—bit. pen. macad. Primary Hy. 5, Mayfield-Mossy Rock, $50,000;
Allun-Riffe, $40,000.
Riffe-Nesika Creek bridge, $25,000.
Glenoma-Kiona Creek, $55,000.
grading, bridges Primary Hy. 1, Avery Rd. to Chehalis, $2,426,500.
b. conc. retopping 6.5 mi. Foster Creek to Thurston Co. line, $108,000.
b. conc. resurf. Secondary Hy. 5-L at Lake Creek bridge, $22,000.
grading, ballast, surf. and bit. pen. macad. Primary Hy. 5, Packwood west, $40,000.
Morton-Fern Gap, $485,500.
ballast, surf. and oil foot of Engle's Hill to Chinook Pass, $145,000.
grading, paving Primary Hy. 15, junction with Primary Hy. 1 to Mary's Corner, $378,000.
mixed seal coat on Secondary Hy. 5-M, north from junction with Primary Hy. 5, $15,000.
Lincoln Co.—grading, surf. and oil Secondary Hy. 4-C, Hesseltine-Wilbur, $557,555.
Mason Co.—grade Primary Hy. 9 in Shelton, Mills St. to Belleview Ave., $21,800.
in Shelton, Goldborough Creek to junction with Primary Hy. 14-A, $21,000.
Okanogan Co.—non-skid seal coat Primary Hy. 10, Tonasket-Oroville, $277,000.
b. conc. paving Brewster to rail terminal, $154,000.
Pacific Co.—grade, ballast, surf. and bit. pen. macad. Primary Hy. 12, Wallicut Hill vicinity, $25,000.
grading, paving Secondary Hy. 13-A, Raymond west, $211,000.
grading, surf., paving and bridges in Raymond, $35,000.
Pierce Co.—grading, paving, bridges on 5 mi. Primary Hy. 1, Fort Lewis main gate to Ponders, $1,224,000;
in Tacoma, M St. to Pacific Ave., b. conc. $36,000.
b. conc. Primary Hy. 5 in Sumner, $25,500.
Sumner east, $25,000.
Secondary Hy. 5-G in Puyallup, Meridian St. from Stewart St. south to city limits, $31,000.
Snohomish Co.—b. conc. Primary Hy. 15, Monroe-Sultan, $165,000;
grading, surf., oiling Secondary Hy. 1-A, Snohomish north $380,000.
subseal, ditch, drain and b. conc. on Primary Hy. 1, vicinity of Walnut Way in Everett, $20,000.
drain and b. conc. 1 mi. Keller's Corner to Oak Rd., $70,000.
Broadway cutoff, $70,000.
spot ballast and macad. surf. Bothell hy. junction to Everett 2.9 mi., $40,000.
Broadway cutoff from junction with Primary Hy. 1 to Bothell, regrading, ballast, surf. b. conc., $100,500.
grading, surf. paving and bridge on Primary Hy. 15, Sultan-Startup, $350,000;
ballast, surf., oil Secondary Hy. 1-A, Granite Falls-Big Rock, $70,000.
grading, paving Primary Hy. 1, Startup-Goldbar, $276,000.
Spokane Co.—grading, surf. Primary Hy. 3, Deer Park bypass, $20,000.
b. conc. Secondary Hy. 2-H within Spokane, Havana St. to Fancher Rd., $22,000.
grading, surf. and oil Primary Hy. 6, Hillyard junction to Dean, $81,000.
Stevens Co.—grading, surf., and oil Primary Hy. 3, Springdale to Valley, $60,000.
Thurston Co.—b. conc. Primary Hy. 1 in Olympia E. 45 Ave., Capitol Way to E. Scott St., $52,000.
Primary Hy. 9, Delphi Rd. junction to Mud Bay, $22,000.
Walla Walla Co.—grading, surf. 3 mi. Primary Hy. 3, Walla Walla South, $235,000.
Whitman Co.—grading Secondary Hy. 3-H, Tekoa, $79,000.
Yakima Co.—roadmix, seal coat resurf. Primary Hy. 3, Summit to Silcott, $100,000.
grading, surf. widen., ballast and bit. pen. macad. Primary Highway 8, Klickitat Co. line to third crossing of Satus Creek, $208,000.

grading, surf. Primary Hy. 3, Parker-Sawyer, $145,000. light pen. macad. Secondary Hy. 3-A, Toppenish-Alfalfa, $35,000. W. A. Bugge, state hy. dir.

Wash., Kennewick—City, City Hall, arterial construction on 10, 1 and 7 Aves., Gum, Washington and Canal Sts., $250,000.

EARTHWORK, WATERWAYS

La., Hammond—Tangipahoa Parish Police Jury, voted $322,000 bonds, drainage excav.

Tex., Freeport—City, voted bonds, drainage, $200,000.

Tex., Santa Rosa—Valley Acres Irrigation Dist., Santa Rosa, voted bonds, Aug. 25, open irrigation canals. $650,000.

AIRPORTS

▲† Colo., Colorado Springs—HOUSING—U. S. Eng., 1709 Jackson St., Omaha, Neb., plans by Edwin A. Francis, consult. engr. and archt., 218 Forest Dr., Denver, troop and admin. bldgs., family housing, utilities and shops at Ent. Air Force Base. $2,000,000.

▲† Kan., Salina—AIRPORT IMPRVS.—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., plans by Wilson & Co., 223 N. Santa Fe St., Salina, Ryan Eng. Co., Salina, Shaver & Shaver, Salina, and A. R. Mann & Co., Hutchinson, archts.-engrs., Smoky Hill Air Force Base. $24,365,000. CD 7/2.

▲ Mo., Kansas City—ADMINISTRATION BLDG.—City, City Hall, plans by Gentry & Voskamp, 112 E. 10 St., admin. bldg. at Municipal Air Terminal, $1,000,000.

▲† Neb., Lincoln—AIRPORT—U. S. Eng., 1709 Jackson St., Omaha, reactivation municipal airport for Lincoln Air Force Base, incl. aprons, runways, pavement, water supply, bldgs., hangars, various quarters and housing for base personnel, warehouses, etc. $29,500,000.

† S. C., Charleston—AIRFIELD FACILITIES—U. S. Eng., Custom House, plans by Patchen & Zimmerman, 525 Telfair St., Augusta, Ga., addnl. facilities for airfield. CD 5/16.

† S. D., Rapid City—SQUAD OPERATIONS BLDG.—U. S. Eng., 1709 Jackson St., Omaha, Neb., squad operations bldg., group admin. bldg., cold storage and meat cutting bldg., security storage bldg., 35,800 ft. total floor space. Patrick D. Horgan, 1170 Elati St., Denver, Colo., consult. engr. and archt.

▲† Tex., Corpus Christi—RUNWAY PAVING—Dpt. Navy, Naval Base, Corpus Christi, airfield and runway paving, $1,760,000. Lockwood & Andrews, Union Natl. Bank Bldg., Houston, consult. engrs. CD 8/27.

Tex., Galveston—AIRPORT—Col. Paul R. Blair & Assoc., Municipal Airport, remodeling, overhauling certain bldgs. at Municipal Airport, providing shop facilities for overhauling airplanes. $350,000.

† Tex., Lubbock—UTILITIES, FACILITIES—U. S. Eng., 1127 Texas and Pacific Bldg., Fort Worth, plans by Atcheson, Atcheson, Cooper, Davis, Inslee, Orr, Foster, Parkhill, Smith & W. T. Strange, 1414 Avenue J, Lubbock, aircraft maintenance facilities and utilities at Reese Air Force Base. Approx. $900,000. CD 7/11

LATIN AMERICA

▲ Mexico—National Railways of Mexico, c/o Dpt. of Operations, Mexico City, rehabilitation of existing (Ferrocarril Mexicano) 500 mi. railway line between Mexico City and Vera Cruz, $5,000,000; extens. and general rehabilitation of railway lines in various sect. of the nation, $25,000,000.

Mexico, Mexico City—National University of Mexico, Mexico City, plans national library, $400,000.

Mexico, Monterrey—Antonio L. Rodriguez, Monterrey, N. L., plans farm insecticides factory. $350,000.

PUBLIC BUILDINGS

▲ Calif., Ventura—SCHOOL—Ventura Union High School Dist., Ventura, plans by Daniel, Mann, Johnson & Mendenhall, 672 S. Lafayette Park Pl., Los Angeles, Eastside Junior High School, $1,831,375; Ventura Junior High School addns., $1,556,837. CD 2/15.

Ga., Rockmart—SCHOOL—Polk Co. Bd. Educ., Cedartown, Ga., bond election Sept. 25, high school, $620,000.

▲ Ky., Versailles—PLANT—City, plant on Big Sink Pike for Standard Products Co., $1,500,000.

▲ Mass., Dartmouth—SCHOOL—Town, School Bldg. Comn., plans by Creer Kent Mather Cruise & Alderich, 423 Industrial Trust Bldg., Providence, R. I. high school, $1,300,000.

▲ Mass., Middleboro—SCHOOL—Town, Chairman Bldg. Comn., plans by Harry J. Korslund, 506 Washington St., Norwood, high school addn. $1,000,000.

Mass., West Boylston—SCHOOL—Town, Supt. Schools, Crescent St., plans by S. W. Haynes & Assoc., 336 Main St., Fitchburg, regional high school, $700,000.

▲ Mass., West Springfield—SCHOOL—Town, School Dpt., plans by Westcott & Mapes, Inc., 109 Church St., New Haven, Conn., 2 story, brick, steel, reincon. high school, $2,000,000. CD 5/28/47.

Miss., Indianola—SCHOOL—City, voted $575,000 bonds, Junior-Senior High School, CD 8/8.

▲ Mo., St. Louis—HOSPITAL—City, Bd. Pub. Service, Frank J. McDevitt, pres., 304 City Hall, Zone 3, plans by Albert Osburg, 30 City Hall, 12 and Market St., Zone 3, alterations, rehabilitation and modernization admin. and ward bldgs., Max C. Starkoff Memorial Hospital, $1,000,000; W. R. Crecelius, City Hall, ch. engr. CD 6/29/45.

N. C., Jacksonville—HOSPITAL—Onslow Co. Hospital, Jacksonville, plans by George Watts Carr, Durham, hospital. $750,000.

▲ O., Akron—HIGH SCHOOL—Bd. Educ., 70 N. Broadway, plans by M. M. Konarski, 844 W. Market St., Perkins Junior High School, Mull and Hawkins Ave. $1,750,000. Edwin F. Bliss, c/o owner, school archt. CD 11/16/50.

▲ O., Hamilton—SCHOOLS—Bd. Educ., $4,635,000 bond election Nov. 6, 6 new schools and complete one now under constr. $4,635,000. CD 2/6/48.

▲† Okla., Fort Sill—BARRACKS, etc.—U. S. Eng., Box 61, Tulsa Zone 2, plans by Wright & Selby, 212 Hightower Bldg., Oklahoma City, 21 barracks, 165 men-each, $8,000,000; motor repair shop, $400,000 4-unit battalion headquarters and regimental headquarters, $350,000; 28,000 sq. ft., warehouse, 80x350 ft.; railroad loading docks and track loading docks on other side, $400,000; 20,000 sq. yd. hard stand, grading, etc. $75,000; heating sys., $100,000; misc. const $500,000; fueling storage and service station, $175,000. CD 6/25.

▲ Tex., Beaumont—RAILWAY SHOPS, etc.—City, maintenance shops, $500,000; passenger land freight stations, $750,000; passenger and freight stations M. P. Ry. Co., $600,000; passenger and freight stations K. C. Ry. Co., $500,000. DeLeuw, Cather & Co., 201 Kyle Bldg., consult. engrs. CD 2/8, under Unclassified.

▲ Tex., Bryan—HOUSING—Bryan Housing Auth., Bryan, 200 addnl. housing units. $1,500,000.

▲ Tex., Port Arthur—HOSPITAL—City, project abandoned. 150-bed municipal hospital, $2,000,000. CD 7/5.

▲ Tex., San Antonio—HOUSING—San Antonio Housing Auth., 400 Labor St., plans by Ford & Rogers, Willow Way, Malcolm Simons, Aztec Bldg., and Leo M. J. Dielmann, 300 E. Market St., all San Antonio, Tex. 6-11, 150 low cost addnl. housing units for Latin-Americans, $1,125,000; plans by Ford & Rogers, Willow Way, Addis Noonan Assoc., Tommy Thompson, Americaan Hospital & Life Bldg., and Clarence Rinard, 1526 Alamo Natl. Bldg., all San Antonio, Tex. 6-12, 275 low cost housing units for Latin-Americans $2,062,500; plans by Ford & Rogers, Willow Way, Van Maltsberger, 2013 Belknap Pl. and Richard Vander Straten, 1546 Milam Bldg., all San Antonio, Tex. 6-13, 187 low cost housing units for Latin Americans, $1,387,500. CD 10/24/49.

Tex., Terrell—HOUSING—Terrell Housing Auth., Terrell, 115 low-cost housing units, $862,500.

Wash., Longview—ELEVATOR—Port of Longview grain elevator addn. $800,000. E. F. Carter, 837 W. Hasting St., Vancouver, B. C., consult. engr. CD 8/29.

▲† Wash., Seattle—WAREHOUSE—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, warehouse to be occupied by Boeing Airplane Co. Approx. $1,000,000.

▲ Wis., Verona—HOME—Dane Co., Madison, plans by Law, Law, Potter & Nystrom, 121 S. Pickney St., Madison, 2 story, 45x185 ft., three 1 story, 43x320 ft. wings, 1 story, bsmnt. 65x114 ft. Home for the Aged, $2,000,000.

▲ Ont., Hamilton—CITY HALL—City, L. D. Jackson, mayor, City Hall, plans by George E. Billson, 63 John St. S., 4 story bsmt., 40,000 sq. ft., rein.-con. frame, brick, stone walls city hall annex. $1,032,000.

▲ Ont., Windsor—HOUSING—City of Windsor and Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto, Ont., 325 houses on west side of city, Approx. $3,000,000. S. M. Connolly, c/o owner, engr.

▲ Sask., Saskatoon—POWER HOUSE—Provincial Dpt. P. Health, Legislative Bldg., Regina, brick power house on campus of University of Saskatchewan. $1,500,000. H. H. Angus & Assoc., Ltd., 615 Yonge St., Toronto, Ont., consult. engrs. CD 7/25.

COMMERCIAL BUILDINGS

Ill., Chicago Heights—SCHOOL—Catholic Bishop of Chicago, 719 N. Wabash St., Chicago, 10, Ill., plans by R. L. Ignelzi, 29 W. 16 St., high school, $750,000.

Mass., Cambridge—BUILDING—Massachusetts Institute of Technology, 77 Massachusetts Ave., plans by Wm. H. Brown, c/o owner, building alterations, renovation, Memorial Dr. $500,000. CD 1/4/49.

Mich., Alma—DORMITORY—Synod of Michigan Presbyterian Alma College, Alma, brick, masonry women's dormitory, $500,000.

Mich., Birmingham—CHURCH—First Presbyterian Parish, 388 N. Woodward St., plans by Harold H. Fisher & Assoc., 1605 Industrial Bank Bldg., Detroit, 1 story, bsmt., concrete, stone church and church school, Woodward St. $400,000.

N. Y., Brooklyn—APARTMENT—Chizner Bros. Building Corp., 26 Court St., Zone 2, plans by Morris Rothstein & Son, 186 Joralemon St., Zone 2, 6 story apartment, 1811 Ocean Parkway. $840,000.

N. Y., Brooklyn—APARTMENT—David Kent, 3857 Kings Hy., Zone 10, plans by Morris Rothstein & Son, 186 Joralemon St., Zone 2, 6 story apartment, 2675-85 E. 7 St. $960,000.

▲ N. Y., Masgth—APARTMENT—Ridgewood Associates, Inc., c/o Leon & Lionel Levy, archts., 331 Madison Ave., New York Zone 17, four 6-story apartments at 65 Pl., 53 Ave., 62 St., and 65 Pl., southeast corner 52 Ave. $3,000,000.

O., Girard—HOTEL—Girard Community Hotel Corp., C. Roy Taylor, pres., will not construct hotel E. Liberty St. $400,000. Project abandoned. CD 6/29.

Tenn., Memphis—DEPARTMENT STORE—Lerner Corp., 13 S. Main St., department store, $750,000.

▲ Tex., Port Arthur—HOSPITAL—St. Marys Hospital, Port Arthur, 3 and 4 story 193-bed hospital addn. $2,500,000. CD 9/5/50.

Vt., Burlington—HOTEL—Van Ness Hotel, 127 Main St., plans by Freeman, French & Freeman, 138 Church St., replace hotel. $700,000.

▲ Wash., Seattle—APARTMENT—Merry Investment Co., Lloyd Bldg., 13 story, apartment, Minor Ave. and University St. $1,160,200.

▲ Que., Quebec City—HOSPITAL ANNEX—Corp. of Hospital Laval, Ste. Foy, Quebec City, plans by R. Blanchet, 53 d' Anticoli St., Quebec City, and P. Brousseau, 581 St. Cyrille S. Quebec City, 9 story, rein.-con., brick, stone hospital annex. Approx. $2,000,000.

INDUSTRIAL BUILDINGS

Ill., Franklin Park—FACTORY—Binks Mfg. Co., 3124 W. Carroll St., Chicago, 60,000 sq. ft. factory, Belmont Ave. $500,000.

▲ Ia., Burlington—PLANT—Sylvania Electric Products, Inc., 1740 Broadway, New York, N. Y., plans by Clarence Wagner, 475 Williams St., Williamsport, Pa., mfg. plant, $1,500,000. CD 3/21.

▲ Ia., Marshalltown—PLANT—Iowa Electric Light & Power Co., Security Bldg., Cedar Rapids, power generating plant, $12,000,000. (Correction—owner). CD 8/8.

▲ La., Baton Rouge—PLANT—Esso Standard Oil Co., North Baton Rouge, expansion of Esso Plant for defense production, $3,040,000.

▲ O., Ashtabula—PLANT—Linde Air Products Co., Div. Union Carbide & Carbon Corp., Carbide & Carbon Bldg., 30 E. 42 St., New York 17, N. Y., facilities for production oxygen and argon gases for metal working industries, Lake Rd, $7,000,000.

O., Cleveland—LABORATORY—National Malleable & Steel Castings Co., 10400 Quincy St., physical testing laboratory for railway engineering development. $750,000.

▲ O., Painesville—PLANT—Diamond Alkali Co., Union Commerce Bldg., Cleveland, Zone 14, 2 year expansion program to increase production caustic soda and chlorine by the electrolytic method, Nursery Rd. $10,000,000.

▲ Okla., Enid—STORAGE—Union Equity Co-operative, Enid, increased elevator storage capacity of 15 million bushels. $5,000,000. E. N. Puckett, Enid, engr.

▲ Tex., Beaumont — REFINERY—Magnolia Petroleum Co., Beaumont, 25,000 bbl. daily capacity feed preparation sys. at existing refinery to hike jet fuel and high-octane aviation gasoline production.$3,000,000.

Tex., Borger—PLANT—U. S. Govt., Synthetic Rubber Production Bureau, Borger (owners); Phillips Chemical Corp., Bartlesville, Okla., (operators) reconstruct portion rubber mfg. plant. $500,000.

▲ Wash., Tacoma—PLANT—Tacoma Boat Building Co., 2412 E. D St., boat building plant, $1,500,000.

▲† Alaska, Fairbanks—PLANT—Golden Valley Electric Assn., Fairbanks, 4,000-kw. steam generating plant and approx. 90 mi. transmission lines, $3,615,000.

UNCLASSIFIED

▲ Mass., Boston—TUNNEL—State Metropolitan Transit Auth., 31 St. James St., Washington St. Tunnel extension (Survey) First Sect., Essex St. Station to Dudley St. Station, Main Line, Essex St. to Shawmut Ave. as far as Bald St. Roxbury then cut over to Dudley St. Station, $20,000,000; Second Sect., Haymarket Sq. to Sullivan Sq. Main Line, $25,000,000; Third Sect., Dudley St. Station to Forest Hills Terminus-Dudley St. Station along Washington St. to Cedar St. over Marcella St. playground to hookup with New Haven R.R., $20,000,000, Jackson & Moreland, 31 St. James St., consult. engrs. CD 2/26/46.

▲ Tex., Beaumont—DAM—Brazos River Conservation & Reclamation Dist., c/o R. D. Collins, secy.-mgr., Mineral Wells, Bee Mountain Dam on Brazos River as water conservation and hydro-electric power house, south of Cleburne, Johnson, Bosque and Comanche Counties. $11,000,000. Ambursen Eng. Corp., M & M Bldg., Houston, consult. engrs. CD 10/28/48.

▲ Tex., Beaumont—RAILWAY YARDS—City, railway yards, $2,750,000; misc. const. $750,000; permanent type paving, $750,000; outside lighting, $200,000; retaining walls, $300,000; general excavations in railway areas, $1,500,000; filling-in bayous, $3,000,000; sewers, $400,000; open and closed drainage, $1,000,000. DeLeuw, Cather & Co., 201 Kyle Bldg., consult. engrs. CD 9/7.

▲† Alaska, Kodiak—RADIO STATION—Bureau Yards & Docks, Navy Dpt., Arlington, Va., naval radio station. $2,225,000. Leo Daly Co., 633 Insurance Bldg., Omaha, Neb., consult. engr. CD 7/23/48.

B. C., Nanaimo—WHARF—Federal Govt., Ottawa, Ont., exten. assembly wharf, 600 ft. long, 70 ft. wide. $576,000.

CONSTRUCTION REPORTS-Second Section

NEW ENGLAND

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Wexler Constr. Co.,** 2 Elm Pl., Brookline, Mass. CA $60,000. lean-to-hangar, airfield, FALMOUTH, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Sept. 3.

R. Zoppo, 842 Providence Hy., Norwood, Mass. CA $74,425. water mains, MARBLEHEAD, MASS. Town, Bd. Selectmen, Town Hall, Marblehead, Mass. CD 8/30, under LB.

S. J. Virgilio Constr. Co., 440 Shrewsbury St., Worcester, Mass. LB $110,103. street constr., WORCESTER, MASS., City, Dpt. P. Wks., 20 E. Worcester St., Worcester, Mass.

Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I., LB. $637,860, Southeasterly Trunk Line from Dale Ave., Cranston to Field's Point, PROVIDENCE, R. I. City, City Hall, Providence, R. I. Bids Sept. 10. CD 9/5.

▲ **C. W. Guild Constr. Co.,** 94 Water St., East Providence, R. I. CA. $1,189,505. sewer constr. EAST PROVIDENCE, R. I. Town, Town Hall, East Providene, R. I. Awarded Sept. 4. CD 9/4, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Chicks Constr. Co., 11 Water St., Clinton, Mass. LB $363,212. SCHOOL, REHOBOTH, MASS. Town, School Bldg., Rehoboth, Mass. Israel T. Almy, 56 N. Main St., Fall River, archt. Bids Sept. 7. CD 8/20.

Monaco Constr. Co., 104 Reservoir Ave., Bridgeport, Conn., LB, $349,000, West Main St. SCHOOL addns., alterations, MILFORD, CONN. Town. Bd. Educ., Town Hall, Milford, Conn. Bids Sept. 5. CD 8/16.

Gellatly Constr. Co., 181 Sylvan Ave., Bridgeport, Conn., LB $750,000, FACTORY, PLAINVILLE, CONN. Trumbull Electric Mfg. Co., Plainville, Conn. Bids July 30. CD 7/20.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

September 26, Delaware
September 28, Pennsylvania

STREETS AND ROADS

September 25, Maryland
September 26, Delaware
September 28, Pennsylvania

Pa., Morrisville—B.A. 9/27—Morrisville Boro Auth., Morrisville, sewage treatment works and sewers. Albright & Friel, Inc., 121 S. Broad St., Phila., engr. CD 3/9.

New York and New Jersey—TUNNEL—B.A. 10/1—At office of the Chief Engineer, Port of New York Auth., 111 8th Ave., New York 11, N. Y., mfg., storage and delivery c.i. and cast steel tunnel lining for Third tube of the Lincoln Tunnel, Contr. LT-160.001. Plans deposit $25. CD 3/12.

N. Y., Colonie—B.A. 11/8—Town, Town Bd., at Temporary Town Hall, west side of Loudon Rd., between Troy-Shaker Rd. and Troy-Schenectady Rd., construct earth dam, Sects 3A, 3B and 3C, addnl. water supply from Stony Creek, incl. Sect. 3A, furnishing sheet piling; Sect. 3B, installing sheet piling and necessary excavation; Sect. 3C, construct earth dam with concrete core wall, spillway, outlet works, etc. for Latham Water Dist. Plans deposit $25. Keis & Hoiroyd, 257 Broadway, Troy, consult. engrs. CD 1/18/50.

BIDS ASKED—BUILDINGS

Md., Easton—SCHOOL—B. A. 9/25—**Talbot Co. Bd.** Educ., 2 story, brick, concrete cinder block Moton Junior & Senior High School, $650,000. Plans deposit $50, Gaudreau & Gaudreau, 330 N. Charles St., Baltimore, archts.

N. J., Millburn—SCHOOL—B. A. 9/26—Bd. Educ., Washington School, Millburn Ave., school addn., alterations, $650,000.

▲ † **D. C., Wash**—INFIRMARY AND LAUNDRY—B. A. 10/9—Distr. Govt., District Bldg., 344-bed, 4 story infirmary and laundry bldg. at Home for the Aged and Infirmed, Blue Plains, $3,450,000. Plans deposit $25. CD 9/6.

N. Y., Whitestone—SCHOOL—B.A. 10/1—Supt. School Bldgs., Design and Constr., 49 Flatbush Ave. exten., Brooklyn, Zone 1, general constr., plumbing and drainage, heating and ventilating, electrical and lighting fixtures for P. S. 193, 152 St. between 11 and 12 Aves., Queens Boro, Spec. Nos. 58-59-61-61. Plans deposit $15 general constr. $6 each others.

N. Y., Far Rockaway—HOUSING—B.A. 10/2—New York City Housing Auth., 63 Park Row, New York 38, N. Y. foundations and general constr.; heating and ventilating; electrical work; plumbing for Redfern Houses, Proj. No. NYS-55, Sect. II, incl. Bldgs. Nos. 6 to 13 inclusive in area bounded generally by Nassau County line, Jeanette Ave., Dabney Ave., Hassock St., and Redfern Ave., Queens Boro. Plans deposit $75.

Del., Wilmington — MANUFACTURING — Bids Asked — Joseph Bancroft & Sons, Rockford, Wilmington, manufacturing bldg. addn., Approx. $82,000.

SOON LETS CONTRACT—BUILDINGS

N. J., Asbury Park—HOME—Salvation Army, 120 W. 14 St., New York 3, N. Y., soon lets contract home for Salvation Army officers, 210 Fifth Ave.

▲ **N. J., Lakehurst**—HOUSING—Dpt. Navy, Pub. Wks. Office, Phila. Naval Base, Phila., Pa., soon lets contract cons ruct. manage and finance 230-military housing units under T tle 8. Edward & Green, Broadway and Carmen Sts., Camden, engrs. CD 10/11, under Airports.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **J .A. LaPorte,** 1101 Wilson Blvd., Arlington, Va., C.A. $242,121, dredging Hudson River between Coeymans and Hudson, Serial CIVENG 30-075-51-116, NEW YORK, U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids July 10. CD 7/2.

NEW JERSEY—State Hy. Dpt., 1035 Parkway Ave., Trenton.

C. F. Malanka & Sons, Inc., 1317 Bergenline Ave., Union City, N. J., CA, $190,651, constr. Route 6, Sections 2B and 3B, from Homestead Ave. to Route S-1, Palisades Park and Fort Lee, Bergen Co. Bids Sept. 11. CD 8/23.

▲ **PENNSYLVANIA**—State Hy. Dpt., North Office Bldg., Harrisburg.

Central Penna. Quarry, Stripping & Constr. Co., 270 S. Pine St., Hazelton, Pa., CA $1,228,303, rein.-con. pavement 1.77 mi. divided hy., three I-beam bridges, grading, drainage from New Cumberland, easterly, U. S. 111, Cumberland and York Counties; CA $823,110, crushed aggregate base with bit. surf. 5.07 mi., four bridges over Emmaville branch of Brush Creek, Brush Creek, Little Brush Creek and over an unnamed stream from Crystal Spring, south, T.R. 126, Fulton Co. Bids Aug. 24. (Correction—status). CD 9/12, under LB.

PENNSYLVANIA—State Hy. Dpt., North Office Bldg., Harrisburg, Pa.

David Goldberg & Sons, Penna. Ave., Uniontown, Pa. L.B. $182,425, reconstruct through truss and plate girder bridge over Conemaugh River and 0.12 mi. c. conc. base with bit. surf. Leg. Rt. 11015, Cambria Co.

B. B. Constr. Co., Philipsburg, Pa., L.B. $90,808, three I-beam bridges over Beaver Run and 0.54 mi. crushed aggregate base with bit. surf. 14 ft. wide, bit. surf. for paving 3 railroad crossings, Leg. Rtes 17128, 17129, 17135, Clearfield Co.

W. L. Dunn Constr. Co., Cochranton, Pa., L. B. $92,520, one I-beam bridge over Little Neshannock Creek and 0.31 mi. crushed aggregate base with bit. surf. Leg. Rt. 37041, Lawrence Co. CD 8/22.

A. B. Cole, Meshoppen, Pa., L. B. $829,357, one I-beam bridge over south branch of Tunkhannock Creek and bridge approaches, divided highway, rein.-con. pavement 24 ft. wide on each side of concrete or earth divisor, exten. existing arch; rein.-con. pavement 24 ft. wide and crushed aggregate base with bit. surf. 1.82 mi. long east and west of Lackawanna-Wyoming Co. line in vicinity of Factoryville, U. S. 11, (Lackawanna Trail), Lackawanna and Wyoming Counties. Bids Sept. 4. CD 8/22, under Streets and Roads.

PENNSYLVANIA—State Hy. Dpt., North Office Bldg., Harrisburg,

Tri-State Asphalt Corp., Martins Ferry, O., L. B. $81-889, wid'n. 0.99 mi. pavement with crushed aggregate base and bit. surf. new and existing pavement, in vic nity of Marienville, Forest Co.

Collins & Maxwell, Inc., Easton, Pa., L. B. $416,926, c. conc. base with bit. surf. 1.42 mi. bit. surf for paving railroad cross ng and street adjustmen s 1.42 mi. U. S. 22-22 Alt. and T. R. 12, Lehigh and Northampton Counties.

B. G. Coon Constr. Co., 278 Union St., Luzerne, Pa., L.B. $185,311, crushed aggregate base with bit. surf. 0.59 mi. 2 rein.-con. structures, one over Browns Creek and other over branch of Browns Creek, Leg. Rt. 40058, Luzerne Co.

Canceled bids to have been opened Sept. 7, crushed aggregate base with bit. surf. 1.09 mi. bit. surf. pavement U.S. Rt. 220, Bedford Co. CD 8/22.

Wm. A. Bulman, 2942 E St., Phila., Pa. L.B. $52,400. Locust St. subway, water pressure sys. and sewage ejectors, PHILA. PA. Dpt. City Transit, City Hall Annex, Phila., Pa. Lawrence Costell, dir. City Transit Dpt. CD 11/9/44.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

H. T. Campbell Sons Corp., Towson, Md. LB $70,675. stone, bit.-con. surf. 1.2 mi. road, Contr. B 631-415, Baltimore Co. Bids Sept. 4. CD 8/24.

BUILDINGS

LOW BIDS AND CONTRACTS

Jade Homes, c/o Stanley H. Klein, archt., 89-31, 161 St., Jamaica, N. Y. Owner builds. $450,000. 47 HOUSES on plot Nassau Blvd. and Bedford Ave., GARDEN CITY, N. Y.

▲ **Tishman-Brill Corp.,** c/o Matern & York, archts., 90-04 161 St., Jamaica, N. Y. Owner Builds. $3,-500,000. 370 HOMES on 70 acre tract to be called Harbor Isle Estates, ISLAND PARK, N. Y.

Beach Drive Development Corp., c/o Sylvan Schwartz, Market St. National Bank Bldg., Phila., Pa., Separate Contracts, $300,000, RESIDENTIAL DEVELOPMENT, North Jersey Ave., etc., CAPE MAY, N. J. Edward A. L. Cox, 709 Market St., Camden, N. J., archt.

† **The Glenwal Co., Inc.,** P. O. Box 296, Rochell Park, N. J., CA, $381,004, cast propellant powder PLANT and modification of Bldg. 266 to house air guns at Picatinny Arsenal, DOVER, N. J. U. S. Eng. 80 Lafayette St., New York, 13, N. Y. Bids Aug. 21. CD 7/31.

▲ **Nason & Cullen,** 6522 Vine St., Phila., Pa., LB $2-000,000, HOSPITAL and MEDICAL CENTER, FLEMINGTON, N. J. Hunterdon Medical Center, Flemington, N. J. Bids Aug. 28.

Mahony-Troast Constr. Co., 1500 Walnut St., Phila., Pa., CA, $250,000, 2 story, bsmnt., 45x164 ft., rein.-con., brick PLANT addn., administration bldg., PAULSBORO, N. J. Socony Vacuum Oil Co., Paulsboro, N. J. James Lawrence c/o owner, co. ch. engr. Robert C. Martin, 1700 Walnut St., Phila., Pa., archts. CD 2/6/46.

William Coriture, Upper Ferry Rd., Trenton, N. J., CA, $82,000. 1 story, 8,075 sq. ft., masonry WAREHOUSE and SHOWROOM, TRENTON, N. J. John A. Popszak, c/o contractor.

B. Bornstein & Son, 2027 Arch St., Phila., Pa., LB $532,000. SCHOOL, Rowland Park Sect., ELKINS PARK, PA. Cheltenham Twp. School Dist., Elkins Park, Pa. Bids Aug. 28. CD 8/17.

Daniel H. Volk, 12 E. School Lane, Yardley, Pa., CA $300,000. RESIDENTIAL DEVELOPMENT, Taft Ave., etc., MORRISVILLE, PA. Morrisville Builders, Inc., 1 W. State St., Trenton, N. J.

Max Haupt, 138 S. 9 St., Phila., Pa. CA. $300,000, design and construct 1 story 120x250 and 30x50 ft., cinder block SMELTER BLDG., PHILA., PA. Penna. Smelting & Refining Co., Ontario and Casper Sts., Phila., Pa.

Jesse B. Casselberry, 5314 Tabor Rd., Phila., Pa., Separate Contracts. Approx. $300,000. RESIDENTIAL DEVELOPMENT, Hunting Park Ave. and J St., PHILA., PA.

D. A. Dintenfass, 6905 Castor Ave., Phila., Pa., Separate Contracts. Approx $450,000. RESIDENTIAL DEVELOPMENT, Rorer St., PHILA., PA. Christian H. Fries, 3701 N. Broad St., Phila., Pa., archt.

Lowber Homes, 2001 Shejmire St., Phila., Pa., Separate Contracts. Approx. $300,000. RESIDENTAL DEVELOPMENT, Elena Sts., PHILA., PA. G. Harold Murphy, 1621 Sellers St., Phila., Pa., archt.

Nicholas DeGredico, 67 St. and Girard Ave., Phila. Pa. Separate Contracts. Approx. $300,000. RESIDENTIAL DEVELOPMENT, Flanders Rd., PHILA. PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

Saul T. Dishler, 2127 E. Washington Lane, Phila., Pa., Separate Contracts. $340,000. RESIDENTIAL development, Thouron and Gilberts Sts., PHILA., PA. Henry S. Berg, 1411 Walnut St., Phila., Pa. archt.

William P. Doall, Inc., 123 S. Murray St., Bangor, Pa., CA. $679,000. general constr. Secondary SCHOOL bldg. for Palisades Joint School Bd., REVERE, PA. State Public School Bldg. Auth., 1400 N. Cameron St., Harrisburg, Pa. Bids June 28. CD 7/3 under LB.

Parkwood Homes Constr. Co., 5701 Woodbine Ave., Phila., Pa. Separate Contracts. Approx. $420,000. RESIDENTIAL DEVELOPMENT, Preston Rd. etc. WILLOW GROVE, PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

The Wynnewood Co., 141 Garrett Rd., Upper Darby, Pa., Separate Contracts. Approx. $300,000. RESIDENTIAL DEVELOPMENT, Knox Rd., etc., WYNNEWOOD, PA. Jack Swerman, 405 Market St., Chester, Pa., archt.

▲† **Cramer-Vollmerhausen Co.,** 2601 Connecticut Ave. N. W., Wash., D. C., CA, $1,948,900, dental SCHOOL bldg. at Howard University W. St N. W., WASH, D. C. Public Bldgs. Service, General Services Admin. General Service Bldg., Zone 25, Wash., D. C. Bids Aug. 7 awarded Sept. 6. CD 8/9, under LB.

E. T. Connaway, Lewes, Del., Separate Contracts, $335,-000. Highland RESIDENTIAL DEVELOPMENT, LEWES, DEL.

▲ **Gaines Constr. Co.,** P. O. Box 226, Wilmington, Del., Separate Contracts, $4,500,000, RESIDENTIAL DEvelopment, New Castle Ave. and U.S. Route 40, NEW CASTLE, DEL.

Goodley & Nicholas, 300 Cleveland Ave., Wilmington, Del., Separate Contracts, $300,000, RESIDENTIAL DEVELOPMENT Florence Ave. McDaniel Heights, WILMINGTON, DEL.

Rice Bros., 804 Windsor Ave., Wilmington, Del., Separate Contracts, $300,000, Northfield A. RESIDENTIAL DEVELOPMENT, WILMINGTON, DEL.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

September 28, Kentucky

STREETS AND ROADS

September 28, Kentucky
October 3, Louisiana

N. C., Kinston—B.A. 9/25—State, Raleigh, roads and walkways at Caswell Training School. Plans deposit $10. Bernard Crocker, Jr., Lawyers Bldg., Raleigh, engr.

† **La., Shreveport**—IGLOOS—B.A. 9/26—U. S. Eng., 300 Broadway, Little Rock, Ark., repair igloos at Louisiana Ordnance Plant, ENG. 03-050-52-8.

† **Louisiana**—B.A. 9/27—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, approx. 39,000 cu. yd. Type 2, fill on Mississippi River. CD 6/26/46.

† **Fla., Orlando**—PAVEMENT JOINTS, etc.—B.A. About 9/28—U. S. Eng., P. O. Box 4970, Jacksonville, cleaning, resealing airfield pavement joints, Pinecastle Air Force Base, Orange Co. Serial No. ENG 08-123-52-45. CD 1/31.

† **Louisiana**—B.A. 9/28—U. S. Eng., foot of Prytania St., New Orleans, 150,000 cu. yd. earthwork on West Atchafalaya Basin protection Levee, Inv. 52-35, St. Mary Parish. CD 6/26/46.

Miss., Amory—B.A. 9/28—City, exten. water distr. sys. Allen & Hoshall, 65 McCall Pl., Memphis, Tenn., engrs. CD 58.

† **Ga., Macon**—SUB-STATION—B.A. 10/1—U. S. Eng., P. O. Box 889, Savannah, constr. Sub-Station 2, Robins Air Force Base, near here, Eng 09-133-52-19. Plans deposit $10.

BIDS ASKED—BUILDINGS

Ga., Decatur—CLASSROOM—B.A. 9/25—City, classroom bldg. for Boys High School. Logan & Williams, Palmer Bldg., Atlanta, Ga., archts. CD 8/29/45.

Fla., Tampa—SCHOOL—B.A. 9/26—Hillsboro Co. Bd. P. Instruction, 509 Morgan St., Lewis Sulphur Springs School. Norman Six, Hillsboro Hotel Lobby, Tampa, Fla., archt. CD 5/13/49.

Ala., Huntsville—HOUSING—B.A. 10/10—U. S. Eng., P. O. Box 1169, Mobile, 7, Ala., construct, manage and finance, 120 housing units at Redstone Arsenal. Extended date. CD 8/15.

La., Alexandria — PLANT — Bids Asked — Texas Light Weight Aggregate Co., Kirby Bldg., Dallas, Tex., cement production plant, expansion imprvs. $85,000.

La., Natchitoches—PLANT—Bids Asked—Texas Light Weight Aggregate Co., Kirby Bldg., Dallas, Tex., cement production plant expansion, imprvs. $90,000.

La., Shreveport — PLANT — Bids Asked — Texas Light Weight Aggregate Co., Kirby Bldg., Dallas, Tex., cement production plant, expansion, imprv. $100,000. CD 8/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Patterson, Emerson & Comstock Co.**, of Alabama Inc., P. O. Box 387, Hampton, Va., L.B. **$232,950.** Stratton Rd. sub-station and electric facilities, LANGLEY AIR FORCE BASE, VA. National Advisory Committee for Aeronautics, Langley Air Force Base, Va. Bids Aug. 30.

Grannis & Sloan, Inc., Fayetteville, N. C., LB. **$354,107.** paving and incidental work, motor pools R.T.C. area, Eng 31-001-52-13, FORT BRAGG, N. C. Contrg. Office, Fort Bragg, N. C. bids Aug. 30. CD 8/20.

J. L. Powers Bennettsville, S. C., LB. **$211,910,** steam distr. sys. extens. at Morganton State Hospital. MORGANTOWN, N. C. State, Raleigh, N. C. Bids Aug. 30. CD 8/20.

† **Standard Dredging Corp.**, 80 Broad St., New York, N. Y., LB, **$937,340,** est. $952,833, dredging about 4,660,000 cu. yd. materials, 49 mi. Intracoastal Waterway from Palm Valley to Flagler Beach, Duval and St. Johns Counties, Eng 08-123-52-6 FLORIDA. U. S. Eng., 575 Riverside Ave., Jacksonville, Fla. Bids Sept. 4. CD 8/6.

† **R. E. Clarson**, P. O. Box 387, St. Petersburg, Fla., CA **$762,469,** eight buildings at Pinecastle Air Force Base, Inv. 52-26, ORLANDO, FLA. U. S. Eng., 575 Riverside Ave., Jacksonville, Fla. Bids Sept. 4. CD 9/12, under LB.

Collins Bros. Constr. Co., 531 Caillavet St., Biloxi, Miss. CA **$300,000.** Motor court, BILOXI, MISS. John L. Toler, c/o contractor.

† **Atlas Constr. Co.**, Waxahachie, Tex. CA **$182,717.** 955,000 cu. yd. earthwork, etc. on Black River levee, Inv. 52-19, Concordia Parish, LOUISIANA. U. S. Eng., P. O. Box 60, Vicksburg, Miss. Bids Sept. 6. CD 8/23.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

W. R. Aldrich & Co., 2493 Baywood Ave., Baton Rouge, La., LB **$545,859.** steel swing span plate girder bridge, drainage structure, b. conc. 5.874 mi. Houma Theriot Hy., State Rte. 247, S. P. 245-02-23, 245-02-03, F. A. S. P. 119 (2), Terrebonne Parish.

Forcum-James Co., 1565 Choctaw Dr., Baton Rouge, La., LB **$87,458.** I-beam span Bayou Terrebonne Bridge (Houma) State Rte. 965 and 2190, and grading, b. conc. 0.607 mi. W. Park Ave. S. P. 855-06-03, 855-12-02, Terrebonne Parish.

W. R. Fairchild Constr. Co., Hattiesburg, Miss., LB **$90,337,** timber bridges, shell surf., steel pontoon barge, etc., 0.057 mi. Pontoon Bridge over Bayou Lafourche at LaRose, S. P. 829-20-02, Lafourche Parish. Bids Sept. 5. CD 8/10.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

Flenniken Constr. Co., Lake Charles, La. LB **$612,681.** grading, concrete slab bridges, shell base course 12.892 mi. Houston River de Quincy Hy., State Rte. 104, SP 31-06-11, 31-07-02, Calcasieu Parish. Bids Sept. 5. CD 8/10.

Farnsworth & Chambers Co., Inc., 3018 Leeland St., Houston, Tex. LB **$930,000.** concrete fdns. on timber piling concrete framing and deck for Napoleon Ave. Wharf, NEW ORLEANS, LA. Port of New Orleans, No. 2 Canal St., New Orleans, La. Bids Sept. 6. CD 8/22.

KENTUCKY—State Hy. Dpt., Frankfort,

The Allen Co., Inc., Winchester, Ky. LB **$224,135.** bit. surf. Class I 9.495 mi. Fullerton-Olive Hill Rd., S 292 (6), SP 45-171, Greenup Co.

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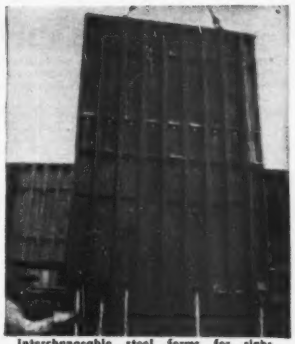

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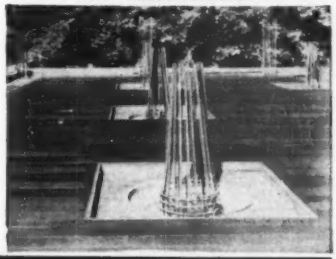

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★ SPECIAL FALL SURVEY OF CONSTRUCTION COSTS

to be published in the **November 1st, 1951** *issue of*

ENGINEERING NEWS-RECORD

Single copies, including WALL CHART OF CONSTRUCTION COSTS $2.00

Wall Chart $1.00 when purchased separately.

Gay-Coleman Constr. Co., 113 Cheapside St., Lexington, Ky. LB **$77,316**. rock asph. seal 47.834 mi. Jackson, Rockcastle, Laurel and Pulaski Counties.

Breslin Constr. Co., 1801 S Brook St., Louisville, Ky. LB **$96,035**. wid'n., high type surf. 1.453 mi. Seventh and Eight Sts. in Louisville, SP 56-528, 56-548, Jefferson Co.

Highland Constr. Co., Inc., 644 Baxter St., Louisville, Ky., LB **$94,787**. w.d'n., bit. surf. Class I 0.741 mi. Broadway from Baxter to Barrett Aves., in Louisville, SP 56-478, 56-678, Jefferson Co. Bids Aug. 31. CD 8/17.

▲ **KENTUCKY**—State Hy. Dpt., Frankfort,

Robert M. Robinson, Owensboro, Ky., CA **$94,452**, bit. penetration surf. and seal 6.937 mi. Glasgow-Flippin Rd., S 331 (5), SP 5-112, Barren Co.; CA **$107,600**. bit. penetration macad. 7.905 mi. Lewisburg-Quality Rd., S 357 (4), SP 71-21, Logan Co.

R. B. Tyler Co., 1446 Levering St., Louisville, Ky. CA **$122,840**, bit. penetration macad. 12.363 mi. Hardinsburg-Union Star-Mooleyville Rd., SP 14-213, 14-253, Breckenridge Co.

State Contg. & Stone Co., Inc., Hartford, Ky. CA **$64,961**. bit. surf. Class C-1 18 mi., Logan Co.; CA **$202,173**, bit. surf. Class I 7.917 mi. Cromwell Aberdeen Rd., F 125 (24), SP 92-84, 92-284, 16-36, Ohio and Butler Counties.

George H. Cheek Constr. Co., McClure Bldg., Frankfort Ky., CA **$82,864**, traffic bound limestone 4.776 mi., Shadrick Ferry Rd., RS 37-565, Franklin Co.

Carey Constr. Co., Citizens Bank Bldg., Lexington, Ky. CA **$105,433**, bit. surf. Class I 7.224 mi. Mt. Eden-Finchville-Fisherville Rd., SP 106-166; 8.356 mi. Shelbyville-Taylorsville Rd., SP 106-186; 1.786 mi. Finchville-Fisherville Rd., SP 56-78, Shelby and Jefferson Counties.

Kentucky Road Oiling Co., Frankfort, Ky., CA **$193,027**, combination of aggregates 33.216 mi. Johnson, Magoffin and Morgan Counties.

Southern Quarries & Contg. Div. of N. Y. Coal Sales Co., 150 E. Broad St., Columbus, O. CA **$89,860**. bit. penetration surf. and seal 5.466 mi. Flippin-Fountain Run Rd., S 290 (1), SP 86-154, Monroe Co.

Kentucky-Virginia Stone Co., Middlesboro, Ky. CA **$61,627**, bit. penetration macad. surf. 4.049 mi. Closplint-Holmes Mill Rd., S 344 (2), SP 48-48, Harlan Co.

H. B. Stanley Ltd., Beaver Dam, Ky., CA **$71,466**, traffic bound river grav. **1.225 mi.** Henderson-Owensboro (Ky 54) Rd., S 214 **(1), SP** 51-79, Henderson Co. Grand total **$1,196,302. Bids Aug. 31.** CD 8/17.

BUILDINGS

LOW BIDS AND CONTRACTS

B. F. Parrott & Co., Boxley Bldg., Roanoke, Va., CA, **$378,325**, 2 story U-shaped, steel, brick stone PHYSICAL EDUCATION BLDG., at State Schools for Deaf and Blind, ROMNEY, W. VA. State Bd. Educ., Charleston, W. Va. Bids Sept. 6. CD 8/24.

King-Hunter, Inc., Greensboro, N. C. CA. **$377,500**. CHURCH addn., GREENSBORO, N. C. First Presbyterian Church Bldg. Comrs., Greensboro, N. C. Bids Aug. 23. CD 8/1.

J. L. Coe Constr. Co., Builders Bldg., Charlotte, N. C., LB. **$494,590**, 150-bed NURSING WING CENTER DIV. McCAIN, N. C. State Sanatorium, McCain, N. C. Bids Aug 30. CD 8/9.

J. R. Eubanks, 3180 Sewell Rd. S.W., Atlanta, Ga. Owner Builds, Approx., **$300,000**, several RESIDENTIAL DEVELOPMENT, ATLANTA, GA.

Reese Rushton Constr. Co., Vidalia, Ga., LB, **$988,000** PSYCHIATRIC BLDG. for Old People at State Hospital, MILLEDGEVILLE, GA. State Dpt. P. Welfare, State Office Bldg., Atlanta, Ga. Bids Sept. 4. CD 8/16.

Fred Acker, 5709 S.W. 62 Ave., Miami, Fla., Owner Builds, Approx. **$300,000**, several residential DEVELOPMENTS, MIAMI, FLA.

Witters Constr. Co., 1397 S.E. 10 Court, Hialeah, Fla. CA, **$850,000** HOTEL, MIAMI BEACH, FLA. National Leasing Corp., c/o Norman M. Giller, archt., 1574 Washington Ave., Miami Beach, Fla. CD 8/21.

All Souls Episcopal Church, c/o John E. Peterson & Frank H. Shuffin, archts., Roper Bldg., Miami, Fla., re.ected Bids Aug. 8. CHURCH, MIAMI BEACH, FLA. LB **$311,123**. CD 8/17, under LB.

Taylor Constr. Co., 2874 N. LeJeune Rd., Miami, Fla., LB **$850,000**, HOTEL, PALM BEACH, FLA. Herman Watkins, c/o Paul E. Kohler, Jr., archt. 335 Worth Ave., Palm Beach, Fla. Bids Aug. 23. CD 8/8.

▲† **Dunn Constr. Co.**, First National Bank Bldg., Birmingham, Ala., CA, **$3,181,596**, base maintenance SHOP at Alabama Ordnance Depot, Fort McClellan, ANNISTON, ALA. Bids Sept. 6. CD 8/29.

Barge-Thompson Co., 136 Ellis St. N.E., Atlanta, Ga. CA **$300,000**. dial and toll OFFICE addn., BILOXI, MISS. Southern Bell Telephone Co., Hurt Bldg., Atlanta, Ga.

▲ **Blaw-Knox Co.**, Farmers Bank Bldg., Pittsburgh, Pa. CA, Approx. **$2,225,000**. gasoline-stripping REFINERY unit, near SHREVEPORT, LA. Stanolind Oil & Gas Co., Stanolind Bldg., Tulsa, Okla.

▲ **Sanderson & Porter**, 1373 Lexington Rd., Louisville, Ky. CA **$1,000,000**. design and construct 2 brick, rein.-con. WAREHOUSES, LOUISVILLE, KY. National Distillers Products Corp., 120 Broadway, New York, N. Y. CD 9/11.

George W. Reagan Co. Inc., 510 Grainger Ave., Knoxville, Tenn., LB **$496,591**. ADMINISTRATION-CHAPEL, GREENVILLE, TENN. Holston Methodist Home, c/o Barber & McMurray, archts., 2405 Kingston Pike, Knoxville, Tenn. Bids Aug. 31. CD 8/30.

J. H. Thompson, c/o Livaudais & Perkins, archts., Columbian Mutual Tower, Memphis, Tenn. Owner Builds. **$300,000.** 37 HOMES in Tuggle sub-division, MEMPHIS, TENN.

F. T. Thayer Constr. Co., 2290 Annella St., Memphis, Tenn., LB. Approx. **$350,000**. DORMITORY, MEMPHIS, TENN. St. Peters Orphanage, 1805 Poplar St., Memphis, Tenn. bids Aug. 31. CD 8/17.

Commercial & Industrial Constr. Co., Thomas Ave., Memphis, Tenn., CA Approx. **$450,000.** 120,000 sq. ft., steel, concrete FACTORY with OFFICES, MEMPHIS, TENN. Chicago Metal Hose Corp., 2021 Latham St., Memphis, Tenn.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 28, Illinois
STREETS AND ROADS
September 25, Ohio
September 28, Illinois

† **Illinois**—B.A. 9/27—U. S. Eng., P.O. Box 59, Louisville 1, Ky., flood protection Mounds and Mound City, Pulaski Co., Cache River Diversion-Repair, Serial No. CIVENG 15-029-52-29. Extended date. CD 9/6.

Mich., Willow Run—B.A. 9/28—Village, U. S. Pub. Housing Admin., 1749 Stamford Rd., Mich. 20251, Div. A, water pumping station, Div. B, sewage effuent pumping station, Div. C, digester heating installation, Hubbell, Roth & Clark, Inc., 2640 Buhl Bldg., Detroit, engrs. CD 5/25.

BIDS ASKED—BUILDINGS

Ill., Bethalto—SCHOOL—B.A. 9/25—Bd. Educ. School Dist. 8 of Madison Co., W. G. Suessen, secy., and Wilburn R. Trimpek, genl. supt. Schools Bethalto Community Unit High School addn. Plans deposit $25. S. T. Pabst & Assocs., Goldman Bldg., East St. Louis, archts. CD 8/29.

Ind., Hammond—OFFICE—B.A. 9/28—Northern Indiana Public Service Co., 500 Broadway, 2 story, 15,000 sq. ft. steel, brick, stone office bldg., air-conditioned. $300,000. L. Crosby Bernard & Co., 7241 Forest St., archts. CD 1/11.

Ill., Chicago—FACTORY—Bids Asked—Roma Macaroni Co., 1850 W. Grand Ave., factory addn. $80,000. Frank J. Serpico, 4800 Milwaukee Ave., archt.

Mich., Hamtramck—PLANT—Bids Asked—Gear Grinding Machine Co., 3901 Christopher St., 1 story, masonry heat treatment plant, $150,000. H. E. Beyster & Assoc., 2000 Industrial Trust Bldg., Detroit, archts. CD 8/10.

Mich., Saginaw—FACTORY—Bids Asked—Saginaw Steering Gear Div. General Motors Corp., 628 N. Hamilton St., 1 story, masonry factory addn. $82,000. Argonaut Realty Div. General Motors Corp., General Motors Bldg., Detroit, archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **INDIANA**—State Hy. Comm., Indianapolis,

Berns Constr. Co., 129 E. Market St., Indianapolis, Ind. LB, **$371,680**, est. $422,712, c. conc. 3.19 mi. U. S. Rd. 52 west of Tippecanoe-Benton Co. line to S. E. of Templeton Benton Co.; LB **$838,310**, c. conc. 3.95 mi. State Rd. 41, Sullivan-Vigo Co. line to South of Youngstown, Vigo Co.

Grady Bros., Inc., 2702 Barnes Ave., Indianapolis, Ind., LB, **$174,938**, est. $191,053, bit. resurf. 1.72 mi. U. S. Rd. 40 in Greenfield c. conc. wid'n. and bit. 4.02 mi. on conc. base, State Rd. 367 in Indianapolis Hancock and Marion Counties.

rejected bids Sept. 11, c. conc. wid'n. and b. conc. resurf. 14.97 mi. State Rd. 55, B 53 and U. S. Rd. 6, Lake Co. Bids Sept. 11. CD 8/30.

▲† **Hughes-Foulkrod**, 809 Schaff Bldg., Phila., 2, Pa., LB, **$3,124,100**, constr. tank farm, Wolf Lake Facilities, HAMMOND, IND. General Services Admin., P. Bldgs. Service, General Services Bldg., Wash., D. C. Bids Sept. 6. CD 8/1.

Jos. D. Bonness, Inc., 1409 N. 27 St., Milwaukee, 8, Wis., LB, **$518,787**, grading, paving at General Mitchell Field, MILWAUKEE, WIS. Milwaukee Co., Milwaukee, Wis. Bids Sept. 6. CD 8/15.

BUILDINGS

LOW BIDS AND CONTRACTS

J. H. Berkebile & Sons, 998 Whittier St., Toledo, O. CA **$998,200**, general constr. LIBRARY and LAW bldg., TOLEDO, O. University of Toledo, Asa Knowles, pres., Bancroft St., Toledo, O. Bellman, Gillette & Richards, 518 Jefferson St., Toledo, O., archts. Awarded Aug. 22. CD 8/28, under LB.

Steinle-Wolfe Co., Fremont, O. CA **$701,199**, general constr. three 3-story men's DORMITORIES, TOLEDO, O. University of Toledo, Asa S. Knowles, pres., Bancroft St., Toledo, O. Bids Aug. 27, awarded Aug. 30. CD 9/6, under LB.

▲† **Sherry Richards Co.**, 201 North Wells St., Chicago, Ill., Wilcox Constr. Co., Long Island City, N. Y., Corbetta Constr. Co., 220 E. 42 St., New York, N. Y., and James McHugh Constr. Co., 6449 S. Park St., Chicago, Ill., LB Est. Over $14,000,000. FINANCE CENTER, FORT BENJAMIN HARRISON, IND. U. S. Eng., 540 Merchand se Mart, Chicago, 54, Ill. Bids Sept. 11. CD 9/5.

Clearing Industrial District, Inc., 38 S. Dearborn St., Chicago, Ill. CA. **$600,000.** 70,000 sq. ft. FACTORY, BEDFORD PARK, ILL. Personal Products Corp., 6425 E. 65 St., Chicago, Ill. CD 8/14.

▲ **Midwest Community Builders, North Lake City, Ill.,** Owner Builds, **$1,050,000** 100 HOMES, NORTH LAKE CITY, ILL. David Fredman, 4308 N. Mason St., Chicago, 41, Ill., archt. Awarded Aug. 29.

▲ **Wheaton Building Corp.**, 228 N. La Salle St., Chicago 1, Ill. Owner Builds, **$1,300,000.** 120 HOMES in and near WHEATON, ILL. Awarded Sept. 4.

Meredith Bros., 121 E. Washington St., Milwaukee 4, Wis., CA **$430,000**, 1 story, 14x320 ft., 70x120 ft., 40x71 ft., STORAGE BLDGS., MILWAUKEE, WIS. Nash-Kelvinator Corp., 3280 S. Clements Ave., Milwaukee, Wis. A. Kuenzli, Watertown, Wis., and F. Rankl, c/o contractor, engrs.

Edward Rose Bldg. Co., 14900 Linwood St., Detroit, Mich. Owner Builds. **$500,000.** 40 single HOMES, Cooley and Seven Mile Rd., DETROIT, MICH.

Charles Engelhardt Constr. Co., 414 Shearer Bldg., Bay City, Mich., CA **$300,000.** 1 story, bsmt., brick, stone CHURCH, FRANKENTROST, MICH. Emanuel Lutheran Parish, Frankentrost, Mich. CD 8/24.

Barnes Constr. Co., 1310 Wallen St. S. W., Grand Rapids, Mich. LB. **$282,165.** 2 story, re n.con. LABORATORY, Michigan State Health Dpt., Western Michigan Laboratory, GRAND RAPIDS, MICH. State, A. N. Langius, dir., State Bldg. Dpt., Grand Rapids, Mich. Bids Sept. 5. CD 8/23.

Howell & Warren, Lansing, Mich, CA, $550,000. 59 HOUSES, Pennsylvania Ave., Cavanaugh Rd., LANSING, MICH. McKim Brothers, c/o Kenneth McKim, 18001 Lahser St., Detroit, Mich.

▲ **Getman Brothers Co.**, South Haven, Mich. CA **$1,400,000.** 1 story, 45x95 ft., brick, steel, concrete municipal POWER PLANT addn., incl. steam turbine, generator, soil and track hopper, Lake Michigan, SOUTH HAVEN, MICH. City, Max Norris, supt. Pub. Wks., South Haven, Mich. Hamilton Webber & Ward, 356 Houseman Bldg., Grand Rapids, engrs.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 28, Kansas, Missouri
STREETS AND ROADS
September 28, Kansas, Missouri

Ark., Russellville—B.A. 9/25—City **(A)** sewage treatment plant, concrete and reinforcing steel construction, gravel surfaced service drives **(B)** 113,185 lin. ft. 6- to 24-in. sewers in trench; 795 lin. ft. 6- to 24-in. c.i. pipe on trestle, 340 manholes, 20 drop manholes, 1534 wyes, etc. $375,000. Marion L. Crist & Assocs., Union Life Bldg., Little Rock, engrs. CD 6/28.

† **Iowa**—B.A. 9/25—Soil Conservation Service, 434 N. Plankington Ave., Milwaukee, Wis., flood control works, Croy-Minor-Watershed, Part D, Sects. 1 and 2, Little Sioux Basin, near Turbin, Monona Co.

† **Minnesota**—B.A. 9/25—U. S. Eng., 1217 U. S. P. O. and Custom House, St. Paul, Zone 1, apron and bank protection Lacqui Parle Dam, Minnesota River, near Montevideo, approx 9 mi. northwest of Montevideo, CIVENG 21-018-52-2. CD 8/30.

† **Neb., Omaha**—**TRANSMITTER FACILITIES**—B.A. 9/26—Civil Aeronautics Admin., City Hall, Kansas City, Mo., construct VHF remote transmitter facilities at Municipal Airport. CD 5/8/50.

† **N. M., Roswell**—FACILITIES—B.A. 9/27—U. S. Eng., Box 1538, Albuquerque, P. O. L. facilities, Walker Air Force Base, Inv. No. ENG 29-005-52-6. Approx. $500,000. Plans deposit $215. CD 8/30.

Okla., Weleetka—B.A. 9/27—City, sewage disposal plant $60,000. R. W. Delaney, Ada, engr.

BIDS ASKED—BUILDINGS

Minn., St. Paul—SCHOOL—B.A. 9/25—City, J. J. McDevitt, purch. agt., 253 City Hall and Court House, rehabilitation Central High School at 275 N. Lexington Parkway, $350,000. Plans deposit $15, W. M. Ingemann & M. V. Bergstedt, 345 Minnesota St., archts. CD 3/27.

Ark., Pine Bluff—SCHOOL—B.A. 9/26—Dollarway Dist. 2, Route 6, Negro School $306,200. Plans deposit $50. Seligman & Reed, National Bank Bldg., archts.

Tex., Lufkin—PLANT—Bids Asked—Land O'Pines Dairy Products, Lufkin, Tex., dairy plant. $150,000. Samuel G. & Wm. B. Wiener, Commercial Bank Bldg., Shreveport, La., engrs.

▲ **Mo., Kansas City**—HOUSING—B.A. 10/10—Kansas City Housing Auth., City Hall, Zone 6, 232 dwelling units at Missouri Ave. and N. Pasco exten. $2,500,000, Marshall & Brown, 1016 Baltimore St., Zone 6, archts. CD 6/7.

▲ **Tex., Beaumont**—REFINERY—Bids Asked—Magnolia Petroleum Co., Beaumont, 25,000 bbl. daily capacity feed preparation sys. $2,225,000. CD 9/5.

SOON LETS CONTRACT—HEAVY CONSTRUCTION

Tex., Midland—GATHERING SYSTEM—Tex-Harvey Gasoline Plant, Inc., Midland, Tex. and Anchor Gasoline Corp., Atlas Bldg., Tulsa, Okla., soon lets contract field gathering sys. carrying gas to plant, **$200,000.**

SOON LETS CONTRACT—BUILDINGS

Tex., Lubbock—CHURCH—First Methodist Church, Lubbock, soon lets contract church. $500,000. Plans deposit $50. Extended date. Wyatt C. Hedrick, 1005 First Natl. Bank Bldg., Fort Worth, engr. CD 7/30.

▲ **Tex., Midland**—PLANT—Tex-Harvey Gasoline Plant, Inc., Midland, Tex. and Anchor Gasoline Corp., Atlas Bldg., Tulsa, Okla., soon lets contract high-pressure absorption type gasoline plant. $5,350,000. CD 8/9, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IOWA—State Hy. Comm., Ames,
Hargrave Constr. Co., 2424 Bever St. S.E., Cedar Rapids, Ia., CA, $520,928, b. conc. resurf. 37.548 mi. Proj. P-1023, Madison, Warren and Polk Counties. Bids Sept. 4. CD 9/7, under LB.

IOWA—State Hy. Comm., Ames, rejected bids Sept. 4, paving 0.412 mi. FN-139, Hancock Co. CD 8/23.
City, Pub. Wks. Dpt., City Hall, Kansas City 6, Mo. rejected bids combined storm an dsanitary sewers 81 and 84 St. Terrace and Wornall Rd. to Walnut St., KANSAS CITY, MO. CA $178,332. (Correction—status). CD 8/2, under CA.

† **Pine Bluff Sand & Gravel Co.**, Pine Bluff, Ark. LB $404,656, revetment, repairs on 14 mi. stretch Missouri River Rulo to Tarkio Bends, 145,600 ft. piling, Inv. 52-35, MISSOURI and KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 6. CD 8-31, under Kansas.

† **H. M. Clark & Sons**, Richmond, Mo. LB $292,491. 650,000 cu. yd. emergency levee repairs on 25 mi. stretch left bank of Missouri River Lexington to Waverly, Inv. 52-23, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 7. CD 8/31.

† **Patton-Tully Transportation Co.**, 1242 N. 2 St., Memphis, Tenn. CA $503,460. repair levees for 34 mi. along Missouri River, 155,800 lin. ft. piling, 35,000 cu. yd. grading, Boonville, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Awarded Sept. 5.

† **Massman Constr. Co.**, 20 W. 9 St. Kansas City 6, Mo. LB $576,833. revetment, repair Missouri River, Cranberry to Brunswick Bends, 39,000 cu. yd. earthwork, Inv. 52-15, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Aug. 30.

† **Massman Constr. Co.**, 20 W 9 St., Kansas City 6, Mo. LB $641,700, revetment, repairs on 25 mi. stretch of Missouri River from East Bottoms Kansas City to Missouri City Bends, Inv. 52-50, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 7.

† **Quinn Constr. Co.**, 5006 Main St., Kansas City 2, Mo. LB $115,000. 370,000 cu. yd. earthwork, emergency levee repair on 125 mi. of Missouri River between Rulo, Neb. and Little Platte Bends, Parkville, Mo., MISSOURI and NEBRASKA. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 13. CD 9/5 under Kansas and Nebraska.

Arkansas Power & Light Co., Simmons National Bldg., Pine Bluff, Ark., Day Labor, $90,000, power lines, incl. 5.5 mi. Columbia Co.; 12.3 mi. Dallas Co. 13.5 mi. Boone Co.; 6.2 mi. Conway Co.; 3.2 mi. Poinsett Co.; 5.7 mi. Craighead Co.; 3.4 mi. Montgomery Co., ARKANSAS. CD 6/7/50.

Cannady Constr. Co., Monett, Mo., CA, $159,475, sewage treatment plant structures, etc.; **Worth James Constr. Co.**, Pyramid Bldg., Little Rock, Ark., CA, $210,856, sewerage collection sys. extens., ROGERS, ARK City, Rogers, Ark. Bids Aug. 30 CD 8/16.

NORTH DAKOTA—State Hy. Comm., Bismarck,
Jordan Constr. Co., Hensal, N. D., CA. $101,836, structural and incid 12.815 mi. Proj. F-145 (3), F-44 (2) and F-87 (3), Bottineau Co. Bids Sept. 7. CD 8/24.

NORTH DAKOTA—State Hy. Comm., Bismarck,
W. H. Noel Co., Jamestown, N. D., CA. $63,522, b. conc. surf. 1.906 mi. Proj. ER-36 (5), Burleigh Co.
Wm. Collins & Sons, Inc., 514 Black Bldg., Fargo, N. D., CA. $67,847, grav. surf. 31.027 mi. Proj. S-392 (6) and S-357 (3), Steel and Cass Counties.
LaVoy & Schefter, Fargo, N. D., CA. $94,823, grav. surf. 55.041 mi. Proj. S-422 (8) and S-402 (5), Mercer, Morton and Grand Counties. Grand total $226,192. Bids Sept. 7. CD 8/24.

NORTH DAKOTA—State Hy. Comm., Bismarck,
Rue Constr. Co., Bismarck, N. D., LB. $74,849, structural and incid. 12.793 mi. Proj. F-266 (6), Dunn Co.
cancelled bids to have been opened Sept. 7, structural and incid. 0.131 mi. Proj. F-314 (11), Oliver Co. CD 8/24.

▲ **NORTH DAKOTA**—State Hy. Comm., Bismarck,
W. H. Noel Co., Jamestown, N. D., LB. $312,729, tr. ser. grav. 14.67 mi. Proj. FI-365 (10) and S-437 (5), Pembina and Wash Counties; L.B. $189,979, grav. surf. 12.793 mi. Proj. F-266 (6), Dunn Co.; L.B. $85,726, grading 11.628 mi. Proj. S-618 (1), Bowman Co.; L.B. $155,218, tr. serv. grav. 13.718 mi. Proj. F-145 (3), F-198 (2), F-44 (2) and F-87 (3), Bottineau Co.; L.B. $264,931, tr. serv. grav. 15.441 mi. Proj. F-235 (13), Mercer Co.
Wm. Collins & Sons, Inc., 514 Black Bldg., Fargo, N. D., LB. $258,354, tr. serv. grav. 13.471 mi. Proj. F-5 (12), Traill Co.
Okes Constr. Co., E1501-1st Natl. Bank Bldg., St. Paul, Minn., LB $307,155, grading, A. E. P.C. c. conc. 3.108 mi. Proj. FI-608 (3), Grand Forks Co.
Northern Constr. Co., 509 S. 3 St., Grand Forks, N. D., LB. $311,159, grading, A. E. P. C. c. conc. 1.723 mi. Proj. UI-608 (2), Grand Forks Co.

Northern Improvt Co., 633 1st Ave. N., Fargo, N. D., LB $624,005, grading, A. E. P. C. c. conc., storm sewer, street lighting, WW and incid. 1,103 mi. Proj. UI-244 (5), Burleigh Co. Bids Sept. 7, CD 8/24.

SOUTH DAKOTA—State Hy. Comm., Pierre,
Ed Chase Constr. Co., Rapid City, S. D., CA $65,273, grav. surf. 16.007 mi., Proj. S 450 (2) and S 635 (1), Edmunds Co.

Dean R. Rounds, Rapid City, S. D., CA. $76,039, grav. surf. 28.306 mi. Proj. S 438 (2), Harding Co.

S. E. Gustafson Constr. Co., W. 12 St., Sioux Falls, S. D., CA $153,344, grading, etc. 9.827 mi. Proj. F 199 (7) Codington Co. Grand total $294,656. Bids Aug. 14. CD 8/2.

† **T. F. Marbut**, Emporia, Kan. and **Condon-Cunningham Co.**, 4229 Lafayette St., Omaha, Neb. CA $286,211. emergency levee repairs along Saline, Soloman and Smoky Hill Rivers, Inv. 52-39, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City, Mo. Bids Sept. 5. CD 8/29.

Service Pipe Line Co., c/o Standard Oil Co. Indiana, 810 N. Lewis Pl., Tulsa, Okla., Owner Builds. 16 in. pipe line for crude oil from Raytown, Jackson Co., Mo. to Standard's oil field in Oklahoma, OKLAHOMA, KANSAS and MISSOURI.

▲ **Westinghouse Electric Corp.**, Union Bank Bldg., Pittsburgh, Pa., CA $1,160,000. electrical equip. for new 550 mi. long common-carrier crude oil pipe line sys. linking West Texas oil fields with refineries and other pipe lines in southeastern and eastern parts of the state, incl. 47 motors ranging up to 2,000 h.p., switchgear, control equip. and auxiliary transformers, TEXAS. West Texas Gulf Pipe Line Corp. (Gulf Oil Co. Standard Oil of Ohio, Pure Oil Co., Cities Service Co.,) Gulf Bldg., Houston, Tex. CD 2/23, under CA.

▲ **Farnsworth & Chambers, Inc.**, P. O. Box 74, Houston, Tex. LB $3,748,232. Baytown Sub-aqueous Tunnel, Contr. II, Proj. No. F 839 (5), Harris Co., TEXAS. State Hy. Comm., Austin, Tex. Bids Sept. 11. CD 8/2.

▲ **TEXAS**—State Hy. Comm., Austin,
J. W. Perry, 501 Insurance Bldg., San Antonio, Tex. LB $104,193, grading, structures, base, surf. 5.151 mi. HY FM 1413, Proj. R 1421-1-1, Liberty Co.

Dudley R. Cloud & Son, 1903 Transit Tower, San Antonio, Tex. LB. $191,002, est. $200,000, grading, structures, base, surf., 11.438 mi. Hy. FM 1157, Proj. 1440 (1), Jackson Co.

Roy Dugger Co., 2702 Anges St., Corpus Christi, Tex. LB. $132,362, est. $100,000, flexible base, asphaltic pavement 6.901 mi. Hy. US 87, Proj. C 143-6-7, Gonzales Co.

T. R. Vardeman & Son, P. O. Box 485, Nacogdoches, Tex. LB. $136,026, est. $100,000. grading, structures 4.995 mi. Hy. SH 7, Proj. S. 1164 (1), Nacogdoches Co.

R. W. McKinney, Box 190, Nacogdoches, Tex. LB. $154,271, est. $100,000, grading, structures, base, surf. 9.29 mi. HY. FM 1565, Proj. F 1494-1-1, Hunt Co.

Killian-House Co., P. O. Box 1981, San Antonio, Tex. LB. $64,303. est. $60,000. grading, structures, fdn. course 2.682 mi. Hy. U. S. 81, Proj. FI 73 (4), Guadalupe Co.

John F. Buckner & Sons, P. O. Box 76, Cleburne, Tex., LB. $137,572, est. $100,000, strengthening existing base and 2 course surf. tr. 10.453 mi. Hy. SH 37, Proj. S 900 (1), Franklin Co.

Bell, Braden, Barker & Gilvin, Inc., Herring Hotel Bldg., Amarillo, Tex., LB. $451,194, est. $200,000, flexible base and b. conc. pavement 9.71 mi. Hy. SH 117, Loop 1401 and SH 152 Proj. C 355-6-121, etc., Hutchinson Co.

Ernest Loyd, P. O. Box 1120, Fort Worth, Tex., LB. $65,177. est. $60,000, grading, structures, base, surf. 5.111 mi. HY. FM 1531, Proj. V 1466-1-1, Hunt and Delta Counties.

Heidenfels Bros., Rockport, Tex., LB., $602,986, est. over $200,000, wid'n. structures, reconstruct and wid'n. flexible base and b. conc. pavement 18.357 mi. Hy. U. S. 77, Proj. C. 327-2 and 3-B and 6, Kenedy Co.
cancelled bids to have been opened Sept. 11, c. conc. pavement wid'n. 1.392 mi. Hy. U. S. 75, Proj. C 92-6-30. Navarro Co. CD 8/24. 8/28. 8/30.

Poka-Lambro Rural Telephone Co-operative, Tahoka, Tex. Force Account. $125,000. pole telephone line unit extens. at Tahoka, Lynn Co., Texas. CD 11/2/50.

▲ **Rancho Pipe Line Ssytem**, c/o Shell Pipe Line Corp., Shell Bldg., Houston, Tex. cancelled bids 477 mi. 24 in. crude oil pipe line carrier, McCamey to Houston, Tex. shp channel and Texas City, $36,500,000; crude oil pumping station, El Dorado, $225,000; crude oil pumping station, McCamey, $275,000; storage farm, McCamey, $500,000; crude oil pumping station, Genoa, $250,000; crude oil pumping station, LaGrange, $300,000, TEXAS. Will re-advertise.

† **U. S. Govt., P. Wks. Office, Naval Air Station, Dallas, Tex.**, rejected bids June 7, transportation garage, NOY 27022, Spec. 29021, DALLAS, TEX. LB $109,974. CD 6/11.
City, Fort Worth, Tex., Own Forces. $60,000. laying distr. sys. units in various sects. near Arlington, FORT WORTH, TEX. Wyatt C. Hedrick, 1005 First Natl. Bank Bldg., Fort Worth, Tex., engr. CD 2/4/49.

† **U. S. Eng.**, 606 Santa Fe Bldg., Galveston, Tex. cancelled bids to have been opened Sept. 28, records and processing bldg., Inv. Eng. 41-243-52-19, LACKLAND AIR BASE (Br. San Antonio) TEX. Est. $2,000,000. Will re-advertise. CD 9/7.

Wharton Co., Court House, Wharton, Tex. Force Account, $90,000. Precinct 1, road improv., gravel, etc. 10 mi.; $85,000 Precinct 2, road improv., incl. shelling, 15 mi.; $75,000. Precinct 3, road improvs., incl. graveling, drainage, 8 mi.; $110,000. Precinct 4, road improvs., incl. asph. surf., drainage, 15 mi. WHARTON, TEX. Grand total $360,000.

▲† **Eckert-Fair Constr. Co.**, 130 7 National City Bldg., Dallas, Tex., CA. $1,988,000 est. $1,850,000. ACADEMIC bldg. at Sheppard Air Port Base, Inv. No. Eng. 34-066 52-4, WICHITA FALLS, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Aug. 28. CD 9/6, under LB.

† **MONTANA**—Bureau Pub. Rds., 342 P.O. Bldg., Missoula,
Carl E. Nelson, Logan, Utah. LB $234,629, plant mix oiling 16 mi. Seeley Lake North Road, Forest Hy. Proj., Missoula Co. Bids Sept. 6. CD 8/30.
C. L. Rogers Co., Wichita Falls, Tex., CA Approx. $100,000, take up and recondition 23 mi. 10 in. pipe, Platte Co., WYOMING. Service Pipe Line Co., c/o Standard Oil Co. of Indiana, 810 N. Lewis Pl., Tulsa, Okla. Awarded Aug. 28.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Madsen Constr. Co.**, 2110 Nicollet Ave., Minneapolis, Minn. and **Steenberg Constr. Co.**, 1371 Marshall Ave., St. Paul, Minn. CA $5,630,642. general constr. completion 14 story, Mayo Memorial MEDICAL CENTER, MINNEAPOLIS, MINN. Regents of University of Minnesota, R. S. Callaway, purch. agt., 323 Admin. Bldg., Main Campus, Minneapolis, Minn. CD 9/5, under LB.

Lovejoy Constr. Co., 1118 Mulberry St., Des Moines, Ia., CA, $838,004, high SCHOOL, KEOKUK, IA. Bd. Educ., Keokuk, Ia. Bids Sept. 7. CD 8/14.
Cowen Constr. Co., Shawnee, Okla., CA. $109,990.
Bd. Educ., Waukon, Ia., rejected bids July 11, 2 story 60x267 ft., SCHOOL, WAUKON, IA. LB $343,000. CD 7/24, under LB.

▲ **W. R. Grimshaw Co.**, KOME Bldg., Tulsa, Okla., CA $4,504,062, general constr. 9 story, bsmnt., HOSPITAL, LITTLE ROCK, ARK. University Medical School, Little Rock, Ark. Bids Sept. 6. CD 8/1.

Peter Kiewit Sons Co., Omaha Natl. Bank Bldg., Omaha, Neb. C.A. $800,000. COLD STORAGE PLANT, OMAHA, NEB. United States Cold Storage Corp., 2011 W. Pershing Rd., Chicago, Ill. Bids Aug. 22. CD 8/25.

▲ **J. E. Dunn Constr. Co.**, 929 Holmes St., Kansas City 6, Mo. LB $1,028,191. general contract, CHEST RESEARCH ADDN. at University of Kansas Medical CENTER. **U. S. Engineering Co.**, 914 Campbell St., Kansas City 6, Mo., LB $334,879. plumbing and heating contract, KANSAS CITY, KAN. State, State House, Topeka, Kan. Bids Sept. 6. CD 8/13.

Thomas Constr. Co., Schneider Bldg., St. Joseph, Mo. CA $379,813. general constr. 5 story HOTEL, on site of Old Times Bldg., LEAVENWORTH, KAN. Leavenworth Community Hotel Co., W. G. Leavel, pres., Leavenworth, Kan. CD 8/28, under LB.

Cowen Constr. Co., Shawnee, Okla., CA. $109,990. BOILER PLANT adn., at University hospital, OKLAHOMA CITY, OKLA., University Hospital, 800 N.E. 13 St., Oklahoma City 2, Okla. Hudgins, Thompson & Ball, 1100½ W. Main St., Oklahoma City, Okla., engrs. Awarded Aug. 31.

R. E. McBride, 4153 Drew St., Houston, Tex., Own Forces. $325,000. 20 DUPLEXES, ANGLETON, TEX. CD 8/27.

A. J. Whipple, R. J. Jordan & Comer Burton, General Delivery, Angleton, Tex., Own Forces. $300,000. 38 DWELLINGS, ANGLETON, TEX. CD 6/26.

Humble Oil & Refining Co., Box 2180, Houston, Tex. rejected bids July 13, 6 SHOP bldgs., BAYTOWN, TEX. CD 7/6.

Gulfton Terrace, c/o James Waldren, Bellaire, Tex. Owner Builds. $360,000. 40 HOUSING units, BELLAIRE, TEX. CD 6/8/50.

Carpenter Bros., 1335 Plowman St., Dallas, Tex., LB $309,600, est. $300,000. 2 story masonry telephone DIAL BLDG., CORSICANA, TEX. Southwestern Bell Telephone Co., 308 S. Akard St., Dallas, Tex. Bids Sept. 5. CD 8/29.

Rosedale Park Apartments, 5117 E. Rosedale St., Fort Worth, Tex., Owner Builds. $390,000. Proj. 3 small APARTMENT units, FORT WORTH, TEX. CD 5/31.

Lakewood Gardens, Inc., 6205 Almeda Rd., Houston, Tex., Own Forces. Approx. $300,000. 25 DUPLEXES, FREEPORT, TEX. Lloyd & Morgan, 4605 Montrose St., Houston, Tex., archts. CD 4/27.

Texas Pipe Line Co., Texas bldg., Houston, Tex. CA $475,000. centrifugal oil PUMPING STATION, HAMLIN, TEX. Basin & Ozark Pipe Line Co., Hamlin, Tex. CD 9/4.

Joseph L. Sivcoski, 4211 Rogers St., Houston, Tex. CA. Approx. $325,000. 45 RESIDENCES, HOUSTON, TEX. Houston Loan & Investment Co., 2nd Natl. Bank Bldg., Houston, Tex., CD 8/30.

Houston Constr. Co., 3801 Bellaire Blvd., Houston, Tex., CA Approx. $325,000. 45 RESIDENCES, HOUSTON, TEX. Braes Development Co., 3801 Bellaire Blvd., Houston, Tex. CD 9/6.

Olson Bros., 2541 Times St., Houston, Tex. Owner Builds. Approx. $300,000. COMMERCIAL, 2400 blk. Norfolk St., HOUSTON, TEX. CD 4/26/50.

Raleigh A. Smith, 6409 Paine St., Houston, Tex., Owner Builds. $360,000. 40 DWELLINGS, HOUSTON, TEX. CD 7/23.

Carver Estates, Inc., 2301 Calumet St., Houston, Tex. Own Forces. $325,000. 35 HOUSING units, in Carver Estates. HOUSTON, TEX. CD 11/20/50.

College Manor Corp., 1st. Natl. Bank Bldg., and **W. J.**

Settegast, Jr., Houston, Tex., Owner Builds. Approx. $375,000. Proj. 1, 48 APARTMENT units, HOUSTON, TEX. CD 7/25.

Reed & Yancey Constr. Co., 3802 Richmond Rd., Houston, Tex., Owner Builds. $310,000. portion Proj. 2, 45 DWELLINGS; $350,000, portion Proj. 2, 50 dwellings, HOUSTON, TEX. Henry Johnson, 5717 Kirby Dr., Houston, engr. CD 5/9/50.

Houston Oxygen Co., 3602 W. 11 St., Houston, Tex. Own Forces. $875,000. Oxygen PLANT, HOUSTON, TEX. CD 6/22.

Carl M. Brown, 1350 Buckner St., Dallas, Tex., Own Forces. $310,000. 70 low cost HOUSING units, MESQUITE, TEX. CD 6/30/50.

Pecos Petroleum Co. & Assoc., Pecos, Tex. Purchase and Hire. $900,000. gasoline PLANT expansion, 35 mi north of PECOS, TEX. CD 9/5.

B. F. Goodrich Rubber Co., Port Neches, Tex., Own Forces. $275,000. addnl. expansion synthetic rubber PLANT, PORT NECHES, Tex.

▲ **Lembke-Clough & King Co.,** Box 425, Albuquerque, N. M., CA, $2,168,916, 7 story, bsmt., rein.-con., brick, masonry HOSPITAL, incl. boiler plant and laundry, steam heating, appurtenances, ALBUQUERQUE, N. M. Bernalillo Co., Court House, Albuquerque, N. M. Bids Aug. 7, awarded Sept. 11. CD 8/15, under LB.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
October 4, California
STREETS AND ROADS
October 3, California

† **Wash., Fort Lewis**—B.A. 9/27—Dpt. Army, Contg. & Purch. Office, Fort Lewis, surf. lumber unloading area at Mount Rainier Ordnance Depot, Inv. 52-24.

† **Wash., Fort Lewis**—PIT COVERS, etc.—B.A. 9/27—Dpt. Army, Contg. & Purch. Office, Fort Lewis, 15 oil control pit covers at various heating plants at Fort Lewis, Madigan Army Hospital and Mount Rainier Ordnance Depot, Inv. 52-23.

Calif., San Pedro—WHARF—B.A. 10/3—Los Angeles Harbor Dpt., Branch City Hall, San Pedro, removal of structures and reconstr. Wharf 181 and two high-line railroad, $60,000. E. C. Earl, harbor engr.

▲ **Wash., Tacoma**—B.A. 10/10—City, City Hall, rein.-con., structural steel bridge over Port Industrial Waterway. $1,000,000. Plans deposit $50. D. E. Morris, city engr.

▲ **Calif., San Francisco**—UNDERGROUND GARAGE—B.A. 11/9—Recreation & Park Comn, San Francisco Parking Auth., 500 Golden Gate Ave., constr. and operate St. Mary's Square Underground Garage. CD 1/15

BIDS ASKED—BUILDINGS

▲ **Wash., Ephrata**—SCHOOL—B.A. 10/1—School Dist. 165, Ephrata, 1 story, rein.-con. steel high school, $1,000,000. Plans deposit $25. J. M. Taylor, Jr., Lowman Bldg., Seattle, archt. CD 4/18.

Calif., San Francisco—SCHOOL—B.A. 10/3—City, Dpt. P. Wks., City Hall, Sunnydale School southwest of present terminus of Sunnyvale Ave. Plans deposit $200. Spencer & Ambrose, 251 Kearny St., San Francisco, archts. Bids July 25 rejected, LB $968,585. CD 8/16, under LB.

▲ **Calif., San Lorenzo**—HOSPITAL—B.A. 10/4—Eden Township Hospital Dist., 453 Paseo Grande San Lorenzo, 118-bed hospital north of Castro Valley between Staunton Ave. and Lake Chabot Rd., $2,500,000. Plans deposit $100. Stone & Mulloy, 619 California St., San Francisco, archts.

SOON LETS CONTRACTS—BUILDINGS

▲ **Calif., San Francisco**—HOUSING—U. S. Eng., 180 New Montgomery St., San Francisco, soon lets contract construct, manage and finance 500 housing units, (113 for Navy and 367 for Army) at Presidio of San Francisco. Angus McSweeney, 514 Mission St., San Francisco, archt. CD 7/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Bay Constr. Co.,** Airport Way and Holgate St., Seattle., Wash., LB, $559,445, Schedule 1, $458,070, Schedule 2, Grand Coulee Spokane 230-kv transmission line, WASHINGTON. Bonneville Power Admin., 827 N.E. Oregon St., Portland, Ore. Bids Sept. 7.

† **OREGON**—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland,

J. G. Watts, Builders Exchange Bldg., Portland, Ore., L.B. $227,532, surf. 6.737 mi. Tiller Trail Hy. Douglas Co. Bids Sept. 6. CD 8/29.

Lane County Electric Co-operative, 436 Charnelton St., Eugene, Ore., rejected bids Sept. 5, 20 mi. 115 kv transmission line, Lane Co., OREGON. L.B. $222,888. CD 8/16.

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,

Baun Constr. Co., P.O. Box 1281, Fresno, Calif., LB $79,254, grading, surf., 5.9 mi. Santa Fe Dr. between Stanislaus Co. line and El Capitan Way, Merced Co. Bids Sept. 5. CD 8/15.

East Bay Municipal Utility Dist., 512 16 St., Oakland, Calif., rejected bids Aug. 10, installing underwater water pipe line install on hangers, etc. between Oakland and Bay Farm Island, Spec. No. LS-550, OAKLAND, CALIF. L.B. $123,025.

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,

Granite Constr. Co., Box 900, Watsonville, Calif., CA, $529,169, 2 rein.-con. bridges and underpass, grade surf. approaches at Santa Rosa St., Ida St. and S.P.R.R. on San Luis Obispo, San Luis Obispo Co. Bids Aug. 22, awarded Sept. 5. CD 9/5, under LB.

▲† **Gunther & Shirley Co.,** 714 W. Olympic Blvd., Los Angeles, Calif., CA, $3,040,415, aircraft maintenance hangar, MIRAMAR, CALIF., Dpt. Navy, Miramar, Calif. Bids Aug. 2. CD 8/8, under LB.

Lowrie Paving Co., Inc., 1755 Evans Ave., San Francisco, Calif., LB, $881,730, paving aprons, taxiways, other grading drainage, etc., San Francisco Airport, Constr. 132, SAN FRANCISCO, CALIF. Public Utilities Comn., City Hall, San Francisco, Calif. Bids Sept. 4. CD 8/20.

McGuire & Hester, 796 66 Ave., Oakland, Calif., LB $277,850, West Central Drainage Proj. 50-1, SAN MATEO, CALIF., City, City Hall, San Mateo, Calif. Bids Sept. 4. CD 8/29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Harsh Inv. Corp.,** 374 S. West Morrison St., Portland, Ore., L.B. $2,767,000 construct, manage, finance Air Force HOUSING, incl. 350 family units, Hill Air Force Base, HILL FIELD, UTAH. U. S. Eng., 74 New Montgomery St., San Francisco, Calif. Bids Aug. 30.

Central Constr. Co., 918 Mallon St., Spokane, Wash., CA, $125,000, 135x168 ft., rein.-con. paper storage WAREHOUSE, SPOKANE, WASH. Spokesman-Review Publishing Co., Chronicle Bldg., Spokane, Wash. CD 9/10

Escherich Bros., Inc., 645 Avenue 21, Los Angeles, Calif., CA, $300,000, 2 story, rein.-con. OFFICE and EQUIPMENT BLDG., CULVER CITY, CALIF. Pacific Telephone & Telegraph Co., 740 S. Olive St., Los Angeles, Calif. Parkinson, Pomelson, Briney, Bernard & Woodford, 410 N. LaBrea Ave., Los Angeles, Calif., archts.

Shumacher-Evans Constr. Co., 354 S. Spring St., Los Angeles, Calif. Owner Builds. $624,100. 57 frame, stucco DWELLINGS, Cosanes, Cecilia, Woodruff and Cord Aves., DOWNEY, CALIF. Wm. A. Bray, 5670 Wilshire Blvd., Los Angeles, archts.

Spears Constr. Co., P.O. Box 1124, Modesto, Calif., CA $307,795, Empire SCHOOL addn., EMPIRE, CALIF., Empire Union Elementary School Dist., Empire, Calif. Frank Wynkoop & Assocs., 1638 Market St., San Francisco, Calif., archts. Awarded Sept. 5.

▲ **Cahill Constr. Co.,** 206 Sansome St., San Francisco, Calif., CA, $1,017,568, base bid plus Alternates 2 and 3, general contract Bret Harte SCHOOL, Hollister and Griffith Sts., SAN FRANCISCO, CALIF. City, Dpt. P. Wks., City Hall, San Francisco, Calif. Bids Aug. 22, awarded Sept. 5. CD 8/31, under LB.

▲ **Biltmore Homes, Inc.,** 9434 Long Beach Blvd., South Gate, Calif., CA, $1,783,200, 200 frame, stucco DWELLINGS, Sunglow, Nova, Roma and Smith Sts., WHITTIER, CALIF. Mark Taper Enterprises, Inc., 9439 Long Beach Blvd., South Gate, Calif. Max Maltzman, 4015 W. Jefferson Blvd., Los Angeles, Calif., archt.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Morrison-Knudsen Co., Inc.,** 319 Broadway, Boise, Idaho, CA, $2,505,500, est. $2,992,740, bulk petroleum storage and handling facilities, Inv. 51-92, Eielson Air Force Base, ALASKA. U. S. Eng., New Washington Hotel, Seattle 1, Wash. Bids July 6. CD 7/10, under LB.

† **U. S. Eng.,** (APO 942, c/o PM, Seattle, Wash.) Anchorage, Alaska cancelled bids to have been opened Oct. 5, 230x463 and 70x98 ft., steel, rein.-con., masonry automotive maintenance facility, Inv. S95-507-52-10, Elmendorf Air Force Base, ALASKA. CD 9/11.

† **S. S. Mullen,** 621 9 Ave. N., Seattle, Wash., LB. $524,500. coal handling facilities, incl. 300 ft. conveyor bridge over river, Proj. 50-A-75, FAIRBANKS, ALASKA. Alaska P. Wks., Dpt. Interior, Juneau, Alaska. Bids Sept. 6. CD 8/10.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Newfoundland, St. John's—B.A. 9/25—P. J. Mangan, engr., 1032 Gottingen St., Halifax, N. S., sewers at Ebsary Estate, for Govt. of Canada, Central Mortgage & Housing Corp., 70 Lyon St., Ottawa, Ont. Plans deposit $10.

Man., Portage La Priarie—HEATING SYSTEM—B.A. 9/26—J. C. Rutledge, Dpt. P. Wks., Ottawa, Ont., central heating system. Plans deposit $25. Dpt. Defence Production, 70 Lyon St., Ottawa, Ont., engr.

Ont., Kingston—DOCK, etc.—B.A. 9/26—Dpt. P. Wks., Hunter Bldg., Ottawa, reconstr., imprvs. Cramford Dock, Approx. $76,000. Plans deposit $20. R Blais, c/o owner, engr. CD 7/21/43.

BIDS ASKED—BUILDINGS

Ont., Owen Sound — ARMORY — B.A. 9/25 — Defence Constr. Ltd., 441 Queen's Quay W., Toronto, armory for two companies at Owen Sound for Canadian Army, $200,000. Plans deposit $50. R. P. Opie, regional engr.

Ont., Picton—BARRACKS—B.A. 9/25—R. P. Opie, 441 Queens Quay, Toronto, one 250-man one 180-men barracks blocks and 500-men mess hall. Plans deposit $50. Defense Constr. (1951) Ltd., 70 Lyon St., Ottawa, engr.

▲ **Que., Montreal**—INSTITUTE—B.A. 9/28—Featherstonhaugh & Assocs., archts., 901 Victoria Sq., Montreal, Que., 5 story, bsmnt., 25x80 ft., 7 story bsmnt., 50x150 ft., rein.-con., stone neurological inst. tute extension, for McGill University, 805 W. Sherbrooke St., Montreal, Que., $2,000,000. CD 8/4/50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Emil Anderson & Son Constr. Co.,** Hope, B. C., CA $2,121,810. Rolled earth, concrete chute spillway structure called Travers Dam, 35 mi. northeast of Lethbridge, ALBERTA. Prairie Farm Rehabilitation Admin., 910 McCallum Bldg., Regina, Sask. Awarded Sept. 10. CD 12/3/43.

Francis Hankin & Co., Ltd., 2032 Union St., Montreal, Que., CA $298,500, equipment for rein.-con. incinerator bldg., CALGARY, ALTA. City, V. A. Newhall, city comr., Municipal Bldg., Calgary, Alta. Awarded Sept. 10. CD 5/9/45.

Dominion Constr. Co. Ltd., 10214 111 St., Edmonton, Alta., CA, installing 18,700 ft. water mains and 19,000 ft. sewer lines, manholes, pumping station and sewage treatment plant, VAUXHALL, ALTA. Town, Vauxhall, Alta. Bids July 23, awarded Sept. 1. CD 7/13.

▲ **BRITISH COLUMBIA**—Province of B. C., Parliament Bldgs., Victoria,

Emil Anderson Constr. Co. Ltd., Hope, B. C. and **General Constr. Co. Ltd.,** Vancouver, B. C., CA, $1,141,574 reconstr. 6.94 mi. hy. Martel-Ashcroft Manor Section Trans-Canada Hy., CA $797,581, reconstr. 5.71 mi. hy. Savona-Cherry Creek Section, Trans-Canada Rd. Bids July 31, awarded Sept. 1. CD 8/10, under LB

BRITISH COLUMBIA—Province of B.C., Douglas Bldg., Victoria,

General Constr. Co., Ltd., Granville Island, Vancouver, B. C. LB, $136,766, 4.43 mi. highway from Schweb's bridge to O'Keefe's store on Kamloops-Vernon Hy. Bids Sept. 7.

H. J. McFarland Constr. Co. Ltd., Talbot St., Picton, Ont., CA, $40,000, main water supply duplicate line from pump house for new water purification plant, PORT HOPE, ONT. Port Hope Waterworks Comn., Port Hope, Ont. Gore & Storrie, 1130 Bay St., Toronto, Ont., engrs. Awarded Sept. 6.

McNamara Constr. Co. Ltd., 42 Industrial St., Toronto, Ont. LB, $273,484, breakwater repairs, imprvs., BROOKLYN, N. S. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Sept. 5. CD 8/20.

McLaughlin Brothers Constr. Ltd., 120 Scott St., Ottawa, Ont., CA, $128,129, relief sewers in west end of city on Foster, Parkdale, Tyndall, Holl and Bryon and sewers at the St. Louis Farm Subdivision, OTTAWA, ONT. City, N. R. Dolivie city clk., Ottawa, Ont. Awarded Aug. 30. CD 8/24/49.

Rayner Constr. Ltd., 29 Commercial Rd., Leaside, Ont., CA, $149,906, est. $194,166. Paving O'Connor Dr. between Pape and Greenwood Aves, TORONTO, ONT. East York Twp., Coxwell and Mortimer Ave., Toronto, Ont. Awarded Sept. 6. CD 5/11.

QUEBEC—Dpt. Roads Quebec City, Que. (Prov. Govt.)

Michaud & Sinnard, 401 Araga St., Quebec City, Que., CA $200,000. Grading, paving north shore approaches of Quebec Bridge on Sir Wilfrid Laurier Highway. E. Gohier, c/o owner, ch. engr.

▲ **QUEBEC**—Dpt. Roads, Quebec City, Que., (Prov. Govt.)

Dibblee Constr. Co. Ltd., 248 Albert St., Ottawa, Ont., CA, Approx. $125,000, paving 9 miles of No. 8 Highway from Ouyon towards Shawville; CA, $125,000, paving streets, in Bristol, Norway, Bay Shawville, Yarm, Carteris, Ladysmith, Otter Lake, Grand Calumet, Campbell's Bay and Fort Coulonge, Shawville.

La Cie De Construction des Boulevard, de Quebec, 1275 Blvd. Charest, Quebec City, Que., CA, $375,000 grading St. Bernard, grading between Ste. Rose and St. Prosper, grading between St. Damase and St. Pamphile grav. in Parishes of Notre Dame des Anges, St. Ubald and Lac au Sables, Potneuf County, Quebec City.

Michaud & Sinard, 401 Araga St., Quebec City, Que., CA $650,000, grading 8 mi. between l'Isle Verte and Cacouna, CA $105,000 paving 6 mi. on Quebec-Ste. Anne de Beaupre Hy., from Quebec to Kent House, and from Ste. Anne de Beaupre to St. Joachim 3 mi. E. Gohier, c/o owner, engr.

F. Ross Constr. Ltd., 8475 Decarie Blvd., Montreal, Que., CA, $270,000, sewage disposal plant ST. HUBERT, QUE. Govt. of Canada, Dpt. National Defence AIR, Cartier Sq., Ottawa, Ont. Defence Constr. (1951) Ltd., 70 Lyon St., Ottawa, engr.

Municipality, Regina, Sask., Own Forces, $49,964 water mains in 19 streets, REGINA, SASK. J.W.D. Farrell, City Hall, waterworks engr. CD 10/20.

Engineers Plumbers Supply, Co., Regina, Sask., CA $35,595, 3 in. gate valves, CD 1/31, Bids Feb. 19;

Poole Constr. Co. Ltd., 7 Hamilton St., Regina, Sask., CA, **$84,841,** Lake Pumping Station Buffalo Pound Lake, REGINA, SASK. Municipality, Regina, Sask. Bids May 7. CD 4/20.

BUILDINGS

LOW BIDS AND CONTRACTS

Marwell Constr. Co., Ltd., 1500 W. Georgia St., Vancouver, B.C., CA, **$351,913,** high SCHOOL addn., FRUITVALE, B.C. School Dist. 11, Trail, B.C. Sharp & Thompson, Berwick, Pratt, 1553 Robson St., Vancouver, B.C., archts. Awarded Sept. 3.

Qualicum Constr. Co. Ltd., Qualicum Beach, B.C., LB **$413,800,** 2 story, frame Junior-Senior High SCHOOL, QUALICUM, B.C. School Dist. 69, Qualicum, B.C. Bids Aug. 27. CD 8/10.

Modern Constr. Ltd., Salisbury Rd., Moncton, N. B., CA, Approx. **$550,000,** ten units married QUARTERS at Army Camp, McGIVNEY, N. B. Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S. P. J. Mangan c/o owner, engr.

Eastern Woodworkers, Brother St., New Glasgow, N. S., CA, Approx. **$800,000,** 100-HOUSING units "Shearwater" DND Married Quarters, Proj. No. 1-50, DARTMOUTH, N. S. Central Mortgage & Housing Corp., 1032 Gottingen St. Halifax, N. S. Bids July 24. CD 7/19.

Annapolis Valley Constr. Co., 16 Main St., Truro, N. S. CA, Approx. **$300,000,** five units married QUARTERS, DEBERT, N. S. Central Mortgage & Housing Corp., 1032 Gottingent St., Halifax, N. S. P. J. Mangan, c/o owner, engr.

John Entwistle, Cornwall, Ont., Ca. **$100,000** PLANT & Bishop St., ALEXANDRIA, ONT. Carnation Co. of Canada Ltd., Alexandria, Ont. CD 7/25.

Falconbridge Nickel Mines Ltd., 44 King St., Toronto, Ont., Own Forces, **$100,000,** MILL exten., FALCONBRIDGE, ONT.

W. C. Brennan Contg. Co., 400 Gage Ave. N., Hamilton, Ont. CA, **$305,000,** 2 story, 120x200 ft., steel, brick FACTORY, TORONTO, ONT. Canadian Hanson & Van Winkle Co. Ltd., 2 Silver Ave., Toronto, Ont. Bids Aug. 29, awarded Sept. 8. CD 8/13.

A. Weller & Co.Ltd., 54 Tecumseth St., Toronto, Ont., CA, **$620,540,** 2 story, steel, brick Alexander Muir Public SCHOOL addn., TORONTO, ONT. Bd. Educ., 155 College St., Toronto, Ont. Page & Steele, 72 St. Clair Ave. W., Toronto, Ont., archts. Awarded Sept. 6. CD 12/15/43.

Harry Wunder Constr. Co., 185 Borden Ave., Kitchener, Ont., CA, **$387,931,** SCHOOL, WATERLOO, ONT. Waterloo Public School Bd., Elizabeth Ziegler School, Waterloo, Ont. Bids Aug. 17. CD 8/9.

Dollard Constr. Co. Ltd., 27 Bureau St., Cape De La Madeleine, Que., CA, Aoorox. **$150,000** PLANT exten., CAP DE LA MADELEINE, QUE. Norton Co. Ltd., Grandmont St., Cap De La Madeleine, Que. CD 1/26.

▲ **J. W. Flamand Ltd.,** 46 Aime St., Jonquiere, Que., CA, **$2,000,000,** 100-bed HOSPITAL, JONQUIERE, QUE. Province of Quebec, Dpt. Health, Quebec City, Que. CD 8/6.

A. F. Byers Constr. Co. Ltd., 5675 Western Ave., Montreal, Que., CA, Approx. **$200,000,** 1 story, 97x265 ft. rein.-con., steel frame, brick, block WAREHOUSE and OFFICE, Royalmount Ave. west of Decarie Blvd., MONTREAL, QUE. Nichols Chemical Co. Ltd., Sun Life Bldg., Montreal, Que.

▲ **C. F. Braun & Co.,** 1000 S. Fremont Ave., Alhambra, Calif., U. S. A. CA **$3,000,000,** REFINERY PLANT, Sherbrooke St., MONTREAL, QUE. Shell Oil Co. of Canada Ltd., 25 Adelaide St. E., Toronto, Ont. CD 6/28.

A. Ninon & Co., Ltd., 133 W. St. Paul St., Montreal, Que., Separate Contracts, **$100,000,** 1 story, 85x260 ft., rein.-con. WAREHOUSE and 1 story, 24x100 ft. OFFICE Cote de Liesse Rd., MONTREAL QUE. F. Consiglo, 1500 W. Ste. Catherine St., Montreal, Que., archt.

Joseph Vallee, Chambord, Que., CA, **$450,762,** 3 story concrete, brick SCHOOL addn., ROBERVAL, QUE. School Comn., Roberval, Que. CD 7/18.

▲ **Foundation Co. of Canada Ltd.,** 1900 Sherbrooke St. W., Montreal, Que., CA. Aoprox. **$2,500,000,** incl. equip. PLANT, VALLEYFIELD, QUE. Nichols Chemical Co. Ltd., Clark Island, Valleyfield, Que.

AMERICANS ABROAD

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Del Balso Constr. Corp.,** 500 Zerega Ave., New York 63, N. Y., CA **$1,688,581,** airfield facilities, Kindley Air Force Base, Fort Bell, BERMUDA. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Aug. 29. CD 8/2.

BUILDINGS

LOW BIDS AND CONTRACTS

Koppers Co. Inc., Koppers Bldg., Pittsburgh, Pa., U. S. A. CA. chemical plant to make dimethylaniline, TORRELAVEGA, SPAIN. Real Compania Asturiana De Minas, Torrelavega, Spain.

CONSTRUCTION REPORTS-Third Section

NEW ENGLAND

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., Augusta,

Thomas Di Cenzo, Calais, Me. CA **$771,230.** bit. macad. 5.692 mi. K-1, F.A. Proj. F 050-1 (2), Presque Isle. Bids Sept. 12.

▲† **Gil Wyner Co., Inc.,** 2 Newland St., Malden, Mass. LB **$2,643,621,** est. $2,485,000. runways, taxiways, aircraft parking areas, Naval Air Station, South Weymouth, WEYMOUTH, MASS. First Naval Dist., 495 Summer St., Boston, Mass. Bids Sept. 11. CD 8/29.

SOUTH

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Laburnum Constr. Corp.,** 918 E. Main St., Richmond, Va., LB, **$1,614,569,** new construction at Naval Mine Depot, YORKTOWN, VA. Fifth Naval Dist., Norfolk 11, VA. Bids Sept. 4. CD 8/10.

▲ **ALABAMA**—State Hy. Dpt., Montgomery

Moss-Thornton Co., Box 127, Leeds, Ala., LB, **$148,872.** bit. 4.98 mi. from Oneonta to Tait's Gap SACP-250-A, Blount Co.; LB **$174,628,** bit. 5.376 mi. Ft. Payne-DeSoto Park Rd., FA-S-524 (1), DeKalb Co.

Clyde O. Mitchell, 104 N. 44 St., Birmingham, Ala., LB, **$539,999,** grading, drainage 12.224 mi. part of Decatur-Moulton Rd., F-119 (2), Lawrence Co.

Floyd S. Mifford, 1412 S. 13 St., Birmingham, Ala., LB **$67,301,** grading, drainage, temporary surf. 4.05 mi. county road from Florete north to Woodland Mills, SACP-186-A, Morgan Co.

Vandigriff Constr. Co., Box 1110, Montgomery, Ala., LB, **$109,551,** base and bit. 15.856 mi. parts of Hardaway-Hurtsboro Rd., FA-S-237 (4) and SACP-702-A and D, Macon Co.

Couch Constr. Co., Box 773, Dothan, Ala., LB, **$249,954,** bit. 9.123 mi. from U.S. 241 to Gallant, SACP-248-A, Etowah Co.

E. J. Cobb Constr. Co., Box 175, Montgomery, Ala., LB, **$78,166** bit. and base 8.435 mi. road from Vernon west to Mississippi State Line, FA-S-273 (5), Lamar Co.

Newell Brothers Constr. Co., Hope Hull, Ala., LB, **$109,085,** bit. 4.665 mi. road from U.S. 31 near McQueen west to Ala. 14, FA-S-445 (2), Autauga Co.

J. B. Maynard, Alexander City, Ala., LB, **$103,123,** base and bit. 11.284 mi. county road from Ashland west to Cragford, SACP-494-A, Clay Co.

Laidlaw Contg. Co., Spring Hill, Ala., LB, **$101,969,** bit. 4.875 mi. Union Church-Dickens Ferry Rd., SACP-672-A, Mobile Co.

L. J. Cousins, 18 S. Lewis St., Montgomery, Ala., LB **$68,688,** grading, draining 10.802 mi. county road between Myrtlewood and Sweetwater, SACP-695-A, Marengo Co. Bids Aug. 31. CD 8/18.

MIDDLE WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **LaCrosse Dredging Corp.,** 310 S. Michigan Ave., Chicago, 4, Ill., CA, **$1,271,835,** est. $962,816. excavation canal and constr. levee downstream from Lock 27, Mississipi River Chain of Rocky Canal, Granite City and vicinity Madison Co., CIVENG 23-065-51-67, ILLINOIS. U. S. Eng., 834 U. S. Court House and Custom House, 1114 Market St., St. Louis, 1, Mo. Bids June 12. CD 6/18, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Duffy Constr. Corp.,** Terminal Tower, Cleveland, O. CA. Approx. **$1,000,000.** diesel locomotive SHOP, 1,000,000,000 gal. oil storage, pump house, fueling and sanding station, ASHTABULA, O. New York Central System, E. A. Dougherty, ch. engr. (West of Buffalo) LaSalle St. Station, Chicago 5, Ill.

▲ **Geo. A. Poag & Assoc., Inc.,** 925 Lincoln Bank Tower, Fort Wayne, Ind., Owner Builds, **$2,000,000,** 200 HOMES in Anthony Wayne Village, Sec. 2; **$1,000,000,** SHOPPING CENTER in Anthony Wayne Village, FORT WAYNE, IND.

▲ **Holliday Park Realty Co.,** c/o Gunnison Homes Co., Charlestown, Rd., New Albany, Ind. Owner Builds **$1,250,000,** 135 HOMES 20 mi. east of Indianapolis at GREENFIELD, IND.

WEST OF MISSISSIPPI

SOON LETS CONTRACT—BUILDINGS

Tex., Lubbock—CHURCH—First Methodist Church, Lubbock, soon lets contract church. **$500,000.** Wyatt C. Hedrick, 1005 First Natl. Bank Bldg., Fort Worth, engr. CD 9/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Broce Constr. Co. Inc.,** Woodward, Okla., LB. **$404,496,** est. $543,419, rehabilitation 21 mi. roads and rehabilitate 3 parking areas and construct approx. 9½ mi. new roads and 2 new parking areas, No. 291-52-4. AMARILLO, TEX. U. S. Atomic Energy Comn., Los Alamos, N. M., Bids Sept. 6. CD 8/31.

† **Robert E. McKee, General Contractor, Inc.,** Box 562 El Paso, Tex., CA. **$884,800.** P. O. L. Facilities, Serial No. Eng 29-005-52-4, Biggs Air Force Base, EL PASO, TEX. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Aug. 28, Awarded Sept. 10. CD 9/6, under LB.

† **Todd Shipyards Corp.,** Chronicle Bldg., Houston, Tex. LB, **$552,822.** six 50x50 regulating gates for spillway, Falcon Dam, Spec. D-4530-A (IBWC) ROMA, TEX. Bureau Reclamation, Dpt. Interior, El Paso, Tex. Bids Aug. 31. CD 7/27.

BUILDINGS

LOW BIDS AND CONTRACTS

Risch Building & Real Estate Co., 9100 Gravois Ave., St. Louis 23, Mo. CA **$400,000.** forty-eight 1 story, bsmnt., 24x34 ft. brick RESIDENCES, 7100 blocks of Sharp, Marwinette and Coronado Aves., ST. LOUIS, MO. Norman J. Risch, c/o 911 Gravois Ave., St. Louis 23, Mo.

F. L. Scott & Son, 2402 W. Kings Hy., San Antonio, Tex. LB. **$396,918.** SCHOOL, SAN ANTONIO, TEX. Communities Facilities Service of Housing & Home Finance Agency, c/o W. F. Sin Sindt, Div. Eng., 1016 Texas and Pacific Bldg., Fort Worth, Tex., Bids Sept. 11. CD 8/22.

FAR WEST

BIDS ASKED—BUILDINGS

Calif., Los Angeles—TOWER UNITS—B.A. 10/8—Los Angeles Water & Power Co., 207 S. Broadway, furnishing, installing 4 cooling tower units for Valley Steam Plant, $715,000. S. B. Morris, city engr. CD 1/31/45.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

WASHINGTON—State Hy. Dpt., Olympia,

Harrison Bros. Co., 225 Waxefield Dr., Tacoma, Wash., CA, **$260,023,** b. conc. 5 mi. Primary State Hy. 5 Ader to Elbe, Pierce Co.

Strong and Macdonald Inc., 4045 Ruston Way, Tacoma, Wash., CA, **$263,006,** clearing, draining, grading 1.5 mi. Primary State Hy. 5, Fern Gap north, Lewis Co.

C. E. Oneal, Ellensburg, Wash., CA, **$406,768,** clearing, draining, grading, surf. 2.5 mi. Primary State Hy. 2, Snoqualmie Pass to Hyak, King and Kittitas Counties. Bids Sept. 11. Grand total $929,797. CD 8/30.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento, Calif.

J. A. Payton & Bent Constr. Co., 5359 Valley Blvd., Los Angeles, Calif., LB, **$1,618,804,** grading, paving, grade separation structures 2.1 mi. Buena Vista Lagoon near Mission Ave., Oceanside, San Diego Co.

Roland T. Reynolds, 8751 Sunkist St., Anaheim, Calif., LB, **$411,286,** grading, surf. 4 mi. in Stanton Ave. between Garden Grove Ave. and Lincoln Ave., Orange Co. Bids Sept. 6. CD 8/15.

▲† **Merritt-Chapman & Scott Corp.,** 17 Battery Pl., New York, N. Y., and **Savin Constr. Corp.,** 10 Village St., East Hartford, Conn., CA. **$29,444,000.** Folsom Dam and appurtenant works, Folsom Reservoir, on American River, Serial No. CIVENG 04-167-52-1, CALIFORNIA. U. S. Eng., 1209 Eighth St., Sacramento, Calif. Bids Aug. 31. CD 9/4, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Myers & Major, Vancouver, Wash., Day Labor, **$700,000,** 50 duplex HOUSING UNITS, LONGVIEW, WASH. K. C. Wollen, Longview, Wash., archt. CD 9/10.

▲ **Parker, Steffens & Pearce,** 135 South Park St., San Francisco, Calif., LB, **$2,643,241,** 4 story, 100-bed HOSPITAL, Vale Rd., west of San Pablo Rd., SAN PABLO, CALIF. West Contra Costa Hospital Dist., Permanent Emergency Center, Martinez, Calif. Bids Sept. 6. CD 8/8.

CANADA

BIDS ASKED—BUILDINGS

Newfoundland—DETACHMENT BLDG.—B.A. 9/26—Secy., Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., R. C. M. Police Detachment bldg. (double-type) at Hawke Bay-Burges-Stephenville Crossing and Deer Lake. Approx. $800,000. Plans deposit $20 each. G. Brault, c/o owner, archt.

BUILDINGS

LOW BIDS AND CONTRACTS

Fried Constr. Co. Ltd., 70 Victoria St., Toronto, Ont., LB, **$837,381,** SCHOOL for crippled children, Blythewood Rd., TORONTO, ONT. Bd. Educ., 155 College St., Toronto, Ont. Bids Sept. 10. CD 8/22.

(Proposal Advertisements see p. 90)

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY

Bids: October 1, 1951

Lighting for Barricades On Van Wyck Approach Road

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
CONTRACT NYA-130.002

Sealed proposals for the furnishing and installation of flashing amber lights on barricades on the Van Wyck Approach Road at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:30 A.M., Monday, October 1, 1951 at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief Engineer and copies will be furnished upon deposit of $10 per set. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, September 20, 1951

Bids: October 4, 1951

Repairs to Roofs, Buildings No. 108 and 115 Port Newark, N. J.

THE PORT OF NEW YORK AUTHORITY
CONTRACT O & M 138

Sealed proposals to furnish all labor, material and equipment to repair roofs of Buildings No. 108 and 115 at Port Newark, Newark, N. J., will be received at the office of the Director of Purchase, The Port of New York Authority, Room 1402, 111-8th Ave., New York 11, until 11:30 A.M., Thursday, October 4, 1951, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, N. Y.

Bids: November 8, 1951

Water Supply From Stony Creek

EARTH DAM;
SECTIONS 3A, 3B and 3C
ADDITIONAL WATER SUPPLY
FROM
STONY CREEK
FOR THE
LATHAM WATER DISTRICT
TOWN OF COLONIE, NEW YORK

Sealed bids will be received by the Town Board of the Town of Colonie, New York, until 7:30 P.M., E.S.T., on the 8th day of November, 1951, at the Temporary Town Hall on the West side of the Loudon Road, between the Troy-Shaker Road and the Troy-Schenectady Road, for furnishing all labor, material and equipment and constructing complete an earth dam with a concrete core wall, sheet pile cut-off, outlet works, spillway, etc. for the Additional Water Supply from Stony Creek for the Latham Water District. The bids will be publicly opened and read aloud.

The work has been divided into three sections as follows:

Section 3A—For furnishing sheet piling.

Section 3B—For installing sheet piling and the necessary excavation therefor.

Section 3C—For constructing earth dam with concrete core wall, spillway, outlet works, etc.

Contractors may bid on any or all of the three sections.

The Information for Bidders, Form of Bid, Form of Contract, plans, Specifications and Performance Bond may be examined at the office of the Town Clerk, Latham, New York, and at the office of Kels & Holroyd, 257 Broadway, Troy, New York, and copies thereof may be obtained at the office of Kels & Holroyd upon payment of $25.00 for each set. Any bidder upon returning such set promptly and in good condition, will be refunded his payment and any non-bidder upon so returning such set within 30 days will be refunded $20.00.

The Town Board of the Town of Colonie, New York, reserves the right to waive any informalities in or to reject any or all bids.

A certified check made payable to the order of the Town of Colonie, in the amount of Five Per Centum (5%) of the bid must be deposited by each bidder with his bid as a guarantee that in case the Contract is awarded to him, that he will, within 5 days thereafter, execute such contract and furnish a satisfactory performance bond. On failure to do so, he shall forfeit the deposit as liquidated damages and acceptance of the bid will be contingent upon the fulfillment of this requirement by the bidder.

The successful bidder will be required to furnish a performance bond satisfactory to the Town of Colonie, New York, in the amount of the contract and having as surety thereon, such surety company or companies as are acceptable to the Town of Colonie, New York.

No bidder may withdraw his bid within 30 days after the date set for the opening thereof. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof.

WILLIAM K. SANFORD
Supervisor

Kels & Holroyd
Consulting Engineers
Troy, New York
Dated: August 30, 1951.

Bids: October 1, 1951

Tractor Enclosure And Power Distribution Panel

THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUS TERMINAL
CONTRACT BT-110.021

Sealed proposals for the construction of a tractor enclosure and the furnishing and installation of a power distribution panel at the Port Authority Bus Terminal will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:45 A.M., Monday, October 1, 1951, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief Engineer and copies will be furnished upon deposit of $10 per set. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, September 20, 1951

Bids: October 2, 1951

Treatment and Cell Block Wing

Notice is hereby given that sealed proposals will be received in the office of the Director, Division of Purchase and Property, Room 318, State House, Trenton 7, New Jersey, for the following:

General work, plumbing, heating and ventilating, electric and prison equipment for Treatment and cell block wing at the New Jersey Reformatory at Bordentown, New Jersey.

Bids for the above will be received at the office of the Director, Division of Purchase and Property, State House, W. State St., Trenton 7, New Jersey on Tuesday, October 2, 1951 at two (2:00) o'clock and will be opened and read immediately thereafter. Bids must be made on the standard proposal form, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than 5% of the amount of the bid, cash, in the amount of 5% of the bid, or a bid bond in the amount of 5% of the bid, and must be delivered at the above place on or before the hour named, as no bid will be accepted after the hour specified. Bids not submitted on the standard proposal form or enclosed in other than special addressed envelopes will be considered informal and will be rejected. The Director reserves the right to reject any and all bids and to award contract in part or whole if deemed to the best interests of the State to do so. The successful bidder will be required to qualify for surety bond in the full amount of the contract, of a company authorized to do business in the State of New Jersey.

Plans and specifications, form of bid, contract and bond for the proposed work are on file and may be obtained upon application to the Director, Division of Purchase and Property, State House, Trenton, New Jersey on deposit of twenty-five dollars ($25.00) for each set; this amount to be refunded to the bidder upon receipt of same in good condition within 30 days after the award of the contract.

DEPARTMENT OF THE TREASURY
Division of Purchase and Property
Fred V. Ferber, Director

NOTICE FOR BIDS

Sealed proposals for sale of approximately 104 tons

USED SHEET PILING

will be received by office of City Clerk in City Hall, 18th & Farnam St., Omaha 2, Nebraska until 2 P. M. September 28, 1951.

WRITE FOR COMPLETE DETAILS

U. S. Government

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota.—Sealed bids, in triplicate, for furnishing all labor and materials and performing all work required for Construction and Delivery of Two (2) Side Dump Scows at the Corps of Engineers Boatyard, Fountain City, Wisconsin, will be received in this office until 11:00 A.M., C.S.T., 4 October 1951, and then publicly opened. Further information upon application.

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, Foot of Prytania St., New Orleans 9, La.—Sealed bids will be received in this office until 11:00 a.m., CST, October 16, 1951, and then publicly opened for construction of Bayou Boef Lock, St. Mary Parish, La., New Orleans District. The principal features involved are approximately 300,000 cubic yards of earthwork, 12,000 cubic yards of concrete, 1,147,000 pounds of steel reinforcement, 22,140 square feet of steel sheet piling, 3,700 linear feet of timber guide walls, 2 sets of structural steel sector gates, electrical work and operating machinery. Further information on application.

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3538) will be received by Bureau of Reclamation, Ephrata, Washington, until October 4, 1951, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork, pipe lines, and structures, area P-2 laterals, sublaterals, and wasteways, Potholes East Canal laterals, Columbia Basin Project, Washington. The work is situated approximately 12 miles south of Othello, Washington. Principal items are approximately: excavation for laterals, 46,000 cu. yds.; concrete, 300 cu. yds.; furnishing and handling cement 437 bbls.; placing reinforcement bars, 29,000 lbs.; furnishing and laying various diameters of concrete pipe, 15,250 lin. ft.; and other work. Time allowed for completion will be 365 days. For particulars, address Bureau of Reclamation, Ephrata, Washington; or Building 53, Denver Federal Center, Denver, Colorado.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT: BUSINESS: **"OPPORTUNITIES"** EQUIPMENT: USED OR RESALE

UNDISPLAYED RATE

$1.50 a Line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED and Individual Selling Opportunity undisplayed rate is one-half of above rate, payable in advance.
Box Numbers in care of our New York, Chicago and San Francisco Offices count as one additional line.
Replies are forwarded each day as received at each of the offices mentioned without additional charge.

Discount of 10% is allowed if full payment is made in advance for 4 consecutive insertions.

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED RATE

The advertising rate $14.25 per inch for all advertising appearing on other than a contract basis. Contract rate quoted on request.
An advertising inch is measured ⅞ inch vertically on one col., 3 col.—30 inches to a page. E.N.R.

New Advertisements received by September 24th will appear in the October 4th issue.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

DRAFTSMAN OR Engineer—preferably with civil engineering or building construction experience. Permanent position with excellent opportunity for advancement with contractor doing national business. State age, education, experience and salary expected. P-1851, Engineering News-Record.

STRUCTURAL ENGINEER: Experienced in steel and reinforced concrete design, for large, well established, Architect-Engineer office in Pacific Northwest. Must be capable of assuming responsibility for design of commercial and industrial buildings. P-1738, Engineering News-Record.

STRUCTURAL STEEL Detail Draftsman and Checker. All types of Structures. Vacation and bonus plan, group insurance, good working conditions. Only top quality men. Send complete written information. Samborn, Steketee and Associates, 1214 Cherry Street, Toledo 4, Ohio.

HEATING AND Refrigeration Engineer wanted. Must be capable of handling mechanical layout, design, and supervision of such installation. Locations of offices served are Racine, Wisconsin; Waukegan, Illinois; Lake Forest, Illinois; and Evanston, Illinois. Pay commensurate with ability. The firm is one of the largest plumbing, heating and refrigeration companies between Chicago and Milwaukee, and is expanding its services yearly. Stiles & Horne, Inc., 648 North Western Ave., Lake Forest, Illinois.

CONTRACTOR'S ENGINEER — Estimator. Thoroughly experienced in office and field in heavy construction work. Eastern area. Write full qualifications and salary experience. P-1869, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT experienced in concrete paving, grading, and drainage work. Permanent basis with well established contracting firm. Work centered in deep South. P-1884, Engineering News-Record.

WANTED—SUPERINTENDENT or Engineer-in-Charge for municipal utility covering electric power generation and distribution, water supply and distribution and sanitary sewer system. Must have electrical engineer's degree and experience in both electric and water systems. Municipal Commission of Herkimer, New York.

POSITIONS VACANT

STRUCTURAL ENGINEER: Experienced in steel design industrial and commercial buildings by a leading Middle-West structural steel fabricating company. Excellent opportunity for qualified man. Permanent. P-1939, Engineering News-Record.

BRIDGE AND Highway Engineers: Designers, Draftsmen and Traffic engineers needed. Interesting projects, permanent positions, good pay, no regimentation. Give full details first letter. Frank D. McEntee, Consulting Engineer, 504 Baltimore Ave., Clarksburg, W. Va.

TOPOGRAPHIC DRAFTSMEN and computers with 2 years experience. Bring samples of work. Rate $2.50 per hour. Interviews 6 days a week. Bruce M. Larrabee, 34B East Main Street, Freehold, New Jersey.

HIGH CLASS Construction executive experienced in estimating Heavy Construction Work. Capable of taking full charge of business. State qualifications. P-1923, Engineering News-Record.

DETAILER AND Checker—Experienced in making and checking shop details for steel fabrication plant. All types of steel construction. State experience, references, and rate expected. Savannah Machine and Foundry Company, P. O. Box 590, Savannah, Georgia.

EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service established 1920, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven.

POSITIONS WANTED

CONSTRUCTION MAN with Engineering and Construction experience wishes foreign construction or allied work. Experience includes grading, buildings, highways, and some railroad and airport construction. 15 years in Spanish Countries, single, age 64, now employed. PW-1740, Engineering News-Record.

SUPERINTENDENT: 30 Years with contractors. Concrete frame structures, Schools, Hospitals, Industrial, Power, Sewage, Water treatment plants, Steel and Cement mills. PW-1852, Engineering News-Record.

BUILDING CONTRACTOR'S Executive, 51, Prof. Engr. N. Y., Indiana, Illinois. Exceptional wide experience, Concrete, Masonry, Industrials, Housings and Miscellaneous Constructions; Proven Salesman, Estimator, Superintendance. Thoroughly familiar with N.P.A. and Governmental procedures, and contract administrations, will relocate. Chicago phone Briargate 4-6200, Apt. 507, Box PW-1824, Engineering News-Record, 520 N. Michigan Ave., Chicago, Ill.

SUPERINTENDENT, 25 years construction experience, bridges, dams, disposal plants, pumping stations, concrete structures, sewer and water systems, heavy excavation rock and soil, waterfront work, etc. Good organizer, know men and equipment, familiar with labor and material costs and distribution. Available immediately, any location. PW-1942, Engineering News-Record.

(Continued on page 93)

WANTED

SALES REPRESENTATIVES—DEALERS

Also 1000 more contractors to try SUPER SEAL, (America's No. 1 blacktop sealer), the material that keeps blacktop right and gives it a future.

A business-building—Money-making—Trouble-saving—Awe inspiring product and one of the greatest developments of the age.

Send for full information and special introductory offer

TROYER DRIVEWAY SERVICE

Seal coating Pioneers • Engineers • Marketeers

2157 So. Park Ave. Buffalo 20, N. Y.
Also driveway colors, tools, etc.

WANTED

MANUFACTURER'S AGENT

Calling on Architects and Building Supply Houses to represent a well accepted building material, New Fiberglass Reinforced Plastic, for the following areas:

Detroit & Vicinity
Chicago & Vicinity
Boston & Vicinity
Hartford & Vicinity
Buffalo & Vicinity
Pittsburgh & Vicinity
Miami & Vicinity
Providence, R.I. & Vicinity
Knoxville & Vicinity
Cincinnati & Vicinity
Cleveland & Vicinity
Savannah, Ga. & Vicinity
New Orleans & Vicinity
Mobile, Ala. & Vicinity

Direct all inquiries to

INTERNATIONAL GLASS FIBRES CORP.
Hicksville, Long Island, New York

CHIEF DRAFTSMAN

Well Established Consultant's Office, Great Lakes area, has an opening for an experienced man to assume charge of structural steel detailing dept. Twenty-four men. Minimum experience requirements 15 years (for fabricator or similar organization) and estimating ability. Position will eventually lead to associate member of firm to proven man.

P-1969, Engineering News Record
520 N. Michigan Ave., Chicago 11, Ill.

PLANT & MAINTENANCE ENGINEER

Experienced, for work in continental United States. Some travelling necessary. State salary expected, age, experience and date available for work. Write

Box ENR 1159, 221 W. 41 St., N. Y. 18.

ESTABLISHED 57 YEARS

POSITIONS IN

Engineering
Architecture
Manufacturing
Contracting
Metallurgy
Appraisals
Chemistry
Teaching
Mining
Sales

Our many years of specializing in Engineering and Technical help enables us to number among our clients the most desirable employers and to place at your disposal a most attractive method of getting in touch with parties needing men of your qualifications.

THE ENGINEERING AGENCY INC.
53 W. Jackson Blvd. Chicago 4, Ill.
Room 1662 Harrison 7-4056

ENGINEER-ADMINISTRATOR AVAILABLE

17 years' broad experience in design and construction management of industrial plants, bridges, warehouses and parking structures. 200 projects up to $1 million each handled by own firm. Experienced in dealing with public officials, industrialists and contractors. Graduate engineer. Licensed in 9 states. National certificate. Age 40. Closing firm due to CMP.

PW 1934, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
Courses of instruction by mail. Forty-first year
Information sent without obligation. Write today.

WILSON *Engineering Corp.*
College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

TECHNICAL DRAFTING SERVICE

Architectural, Engineering and Industrial drawings, Tracings, Lettering, Charts, and Graphs. Shop drawings, Detailing, and Designing, Patents, Trade marks, Advertising illustrations, etc.

Competent draftsmen, engineers and architects equipped to assist you with drafting problems

A. A. Oliveri R. A. and Assoc., 4046 Grace Ave.,
New York City (66), N. Y. Tel: Fairbanks 5-8712

ENGINEERS

Chemical - Mechanical - Piping - Process

Long term openings in permanent offices located at Cleveland, Ohio and Frederick, Maryland offering good salary plus overtime (forty eight hour week) for qualified Engineers, Group Leaders and Designers experienced in one or more of the following phases of industrial plant design:

Process Piping	Plumbing	Heating and Ventilation
Instrumentation	Tanks and Vessels	Refrigeration
Process Equipment Layout	Boiler Houses	Sprinklers
Packaging	Plant Layout	Water Treatment
Air Conditioning	Conveyors	

Limited number of openings for Estimators experienced in Mechanical and Chemical installations as well as building construction.

Also have a number of openings in our Cincinnati and New York City offices for similar type personnel.

Excellent working conditions with paid vacations, sick leave plan and participating Group Insurance Program.

Please submit complete resume stating experience, education, salary required and date available to:

The H. K. FERGUSON COMPANY
Engineers and Builders
FERGUSON BUILDING — CLEVELAND 14, OHIO

PROJECT MANAGERS
CONSTRUCTION SUPERINTENDENTS

Project Managers capable of supervising design and construction of multi-million dollar industrial projects required for long term opportunities with established nationally known firm.

Must be experienced in complete supervision of such projects as Power Plants, Paper and Pulp Mills, Chemical Plants, Heavy Manufacturing facilities, etc.

Construction Superintendents with similar experience required for smaller projects.

In first letter, give full details concerning experience and education together with availability and salary requirements. All replies confidential.

P-1844, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

DESIGNERS

We need men with experience as:

Structural Designers
Concrete Designers
Electrical Designers
Piping Designers
Checkers

Men should have experience in Blast Furnaces, Steel Mill, Oil Refinery or other heavy structural design.

Positions available in our offices at Cleveland, Ohio, and Union, New Jersey.

We pay among highest rates, plus annual profit sharing bonus.

Our continuous expansion and growth offers many fine future opportunities.

Write.

ARTHUR G. McKEE & Co.
2300 Chester Ave., Cleveland 1, Ohio

BUILDING AND PLANT LAYOUT DESIGNER

Permanent opening, upstate New York location. C. E. degree required. Prefer licensed Professional Engineer and land surveyor with about 10 years experience in the design of buildings, plant and building layout, drainage systems, building services and architectural work for industrial plants. Please send brief resume to

P-1858, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

Fire Protection ENGINEERING

An expanding field with a top-flight organization.

RECENT GRADUATES

Wanted to train as fieldmen. Send personal resume to:

P-1783, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

ESTIMATOR-SALESMAN

Wanted in California

By millwright and rigging department of prominent Southern California industrial contractor. Right man will be thoroughly capable of following up leads on small to large equipment installations, minor plant alterations, etc., estimating and closing deals on same visit. Must be experienced, personable, fast-moving, and eager to take full advantage of the opportunities abounding in this most active of all industrial construction fields. Salary and bonus based on earnings of department. Send complete business and personal background. Replies held in strictest confidence.

P-1921, Engineering News Record
1111 Wilshire Blvd., Los Angeles 17, Calif.

DESIGNERS and DRAFTSMEN
for
BRIDGES and HIGHWAYS

Permanent Positions

RICHARDSON and GORDON

1411 WALNUT STREET
PHILADELPHIA 2, PA.

CIVIL ENGINEER

with a minimum of 3-5 years experience in the design of sanitary sewers. Must be thoroughly competent to take over the complete design of a sewer system for a population of 60,000 in all details. Work is located at Morrisville, Pennsylvania.

Phone Manhasset 7-0777
C. A. MONROE
1900 Northern Boulevard, Manhasset, N. Y.

CONSTRUCTION SUP'T & ENGINEER

Technical college graduate, well-experienced in building construction and installation of equipment; willing to travel to locations in United States. State age, salary expected, experience in detail, and date available to begin to work. Write

Box ENR 1157, 221 W. 41 St. N. Y. 18

WANTED

Construction Engineer

(Mechanical or civil) for process plant. Experienced in heavy construction, including buildings, piping, and machinery installation.

ALSO, DESIGN ENGINEER

(Mechanical or civil) for process industry. Familiar in heavy industry plant construction, including design, equipment specifications, and machinery installations.

These positions in a modern, expanding plant in northern Ohio River valley. Attractive insurance and pension plans, desirable community, excellent opportunities for competent men.

P-1782, Engineering News-Record
520 N. Michigan Avenue, Chicago 11, Ill.

WANTED
SANITARY ENGINEER

A large American Company in Venezuela requires an experienced graduate sanitary or Civil Engineer. Must have at least three years' experience in sanitary engineering. Will be required to make inspections and recommendations of sanitation facilities and programs including water supply and treatment, sewerage systems and treatment plants, insect control, slaughter houses, mess halls, etc.

Write giving age, marital status, education, and detailed experience resume.

Box 308-A—Radio City Station
New York 19, New York

WANTED

SUPERINTENDENT & SEWER FOREMAN

6—Experienced Sewer Foremen &
1—Superintendent
6—Shovel Operators
Trenton, N. J., Area—long term job.

UNITED FOUNDATION CORPORATION
680 Lexington Rd., Union, N. J.
Phone: Unionville 2-4257

Wanted—ASSOCIATE EDITOR

Must have intimate knowledge of construction equipment and its application and be able to prepare finished copy for publication. Experience in construction, writing and editing essential. Send resume and state salary.

P-1938, Engineering News Record
330 W. 42 St., New York 18, N. Y.

POSITIONS WANTED
(Continued from page 91)

HARD HITTING General Construction Superintendent available now. Good organizer. Specializing large housing projects such as: houses; duplexes and three story apartments. PW-1960, Engineering News-Record.

BUILDING SUPERINTENDENT Estimator, or General Foreman. 22 years Experience. Free to travel. PW-1936, Engineering News-Record.

QUARRY SUPERINTENDENT. Production Manager: experienced operator in traprock, granite, limestone; specialist in drilling and blasting using well or wagon drill operation, thoroughly familiar modern methods of crushing, conveying, screening and rehandling finished product. Married, 48 years old, commercial quarry references, available immediately for any U. S. location on commensurate salary, tonnage or unit cost per ton basis. PW-1951, Engineering News-Record.

CIVIL ENGINEERING Graduate, 30, 4 years experience field and office construction, highways and industrial layout, also plans survey, quantity estimating and drainage. Desire position with Engineering or Construction firm in East. PW-1956, Engineering News-Record.

EXECUTIVE: ORGANIZER, thirty years building and heavy construction, open for responsible field or office connection requiring top man to assume full responsibility as Project Manager, General Superintendent, or similar executive position. PW-1915, Engineering News-Record.

ARCHITECTS-ENGINEERS — Owners Field Superintendent considerable experience large industrial and chemical plants, now with well known company on large project, good references. PW-1914, Engineering News-Record.

EXECUTIVE SECRETARY (female) Construction and engineering experience, refined type, high salary. PW-1913, Engineering News-Record.

WORK WANTED

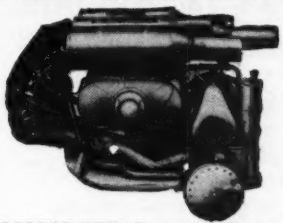
Electrical Engineer
Registered, specializing Industrial Plants wants work on fee or contract basis. Small staff available. W. B. Leland, Box 2671, Greensboro, N. C.

Reinforced Concrete
Detailing and Estimating; can handle any size job; am located in Birmingham, Ala. WW-1909, Engineering News-Record.

WANTED

Wanted
NEW AND USED
TRACTORS and EQUIPMENT
For construction of airfields, dams and roads in friendly countries.
TRACTORS FOR EXPORT, INC.
2 Maiden Lane
New York 38, N. Y.
Telephone: BEekman 3-7975-6-7-8-9

WANTED
1—Pullshovel attachment for "Lorain 40"
(New Style Goose Neck Type)
1—Barber Green Trencher Model 44 or equal
1—Parsons Trencher for 12 foot Depth or equal
1—Dozer (heavy) or rubber.
UNITED FOUNDATION CORPORATION
680 Lexington Rd. Union, N. J.
Phone Unionville 2-4257

PORTABLE HEAT

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Brand New $265.00
Completely Rebuilt $195.00
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MINNEAPOLIS 14, MINN.

PROTECT EQUIPMENT

U.S.A. Air Corps
LIGHT BROWN
(CORONADO TAN)
ENAMEL
REGULAR $30. VALUE
5 FULL GALLONS FOR ONLY $3.95
SHIPPING WEIGHT 60 LBS. F.O.B. PHILA.
A fine bodied, lusterless, enamel made to U.S. Air Corps Spec. #680—Class 50. For all wood and metal surfaces, protects against weather, rust and corrosion. For brush or spraying inside or outside, can be blended with other colors. Ideal for road equipment, scrapers, cranes, trucks, tool sheds and outbuildings. Makes fine prime coat.
Rated Firms Open Account—Others Send Check
1744
J. JACOB SHANNON & CO.
214 N. 22nd St., Phila. 3, Pa.
The Oldest Equip. House in Phila.

DITCHER BARGAIN
Model 203 Badger, used less than 30 days. Price $3000.
Eastern Carolina Engineering Co.
P. O. Box 284, Kinston, N. C.

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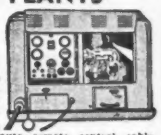
Brand New! War Surplus
Signal Corps
Power Unit PE 197

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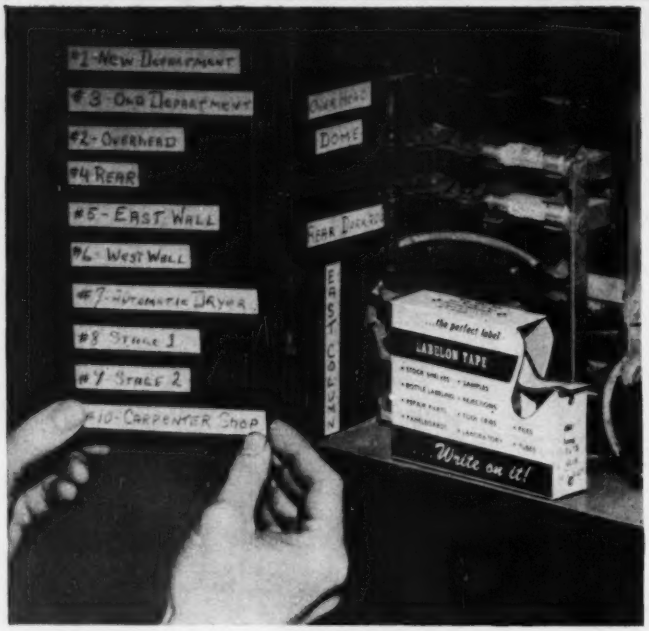

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Because it withstands temperatures all the way from minus 40 to plus 160 deg F without losing its adhesiveness or legibility, it's fine for a myriad of jobs. You can also type on it by pressing it on the typewriter platen and typing without the ribbon; it will re-adhere several times. As shown in the picture above it is excellent for labeling electrical apparatus, fuse boxes, switches, panelboards, etc., and also for identifying wires pulled through conduits. The 8 mm and $\frac{3}{8}$, $\frac{3}{4}$, 1 and $1\frac{1}{4}$-in. sizes, and the black, blue, red and green colors allow for numerous coding combinations. All armed services use it, and the Air Force has placed several million-inch orders. Rolls come 400-in. long with dispensers and 800-in. long without them. LABELON TAPE COMPANY, 100 ANDERSON AVENUE, ROCHESTER 7, NEW YORK.

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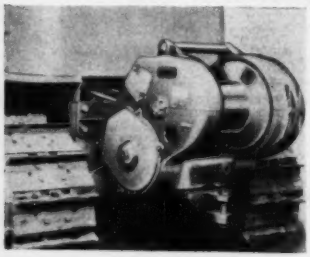

Tractor winch has automatic brake

In addition to concealed cable controls, a new toggle-type brake and choice of standard or slow speed gears, this new Carco winch has an optional automatic brake which lets the tractor operator set his brake before pulling in a load. The brake takes hold simultaneously with disengagement of the clutch, preventing back-slipping of the load. This is particularly desirous wherever men are working near or under a load.

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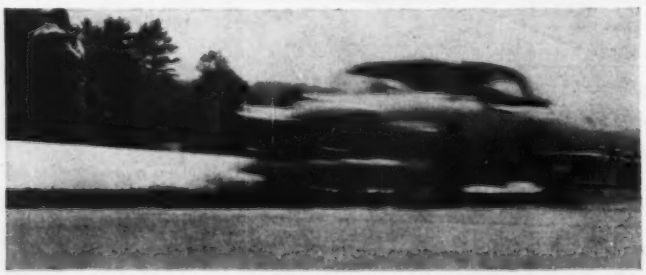

Tough test for plastic paint

Here's a shot of a car striking a guard rail in Connecticut's Wilbur Cross Parkway during safety tests conducted by state police and highway department officials. An interesting by-product of the tests was the resistance of the guard rails' protective plastic paint. Corrosite, which showed only a few scratches and scrapes after crashes at different angles and various speeds.

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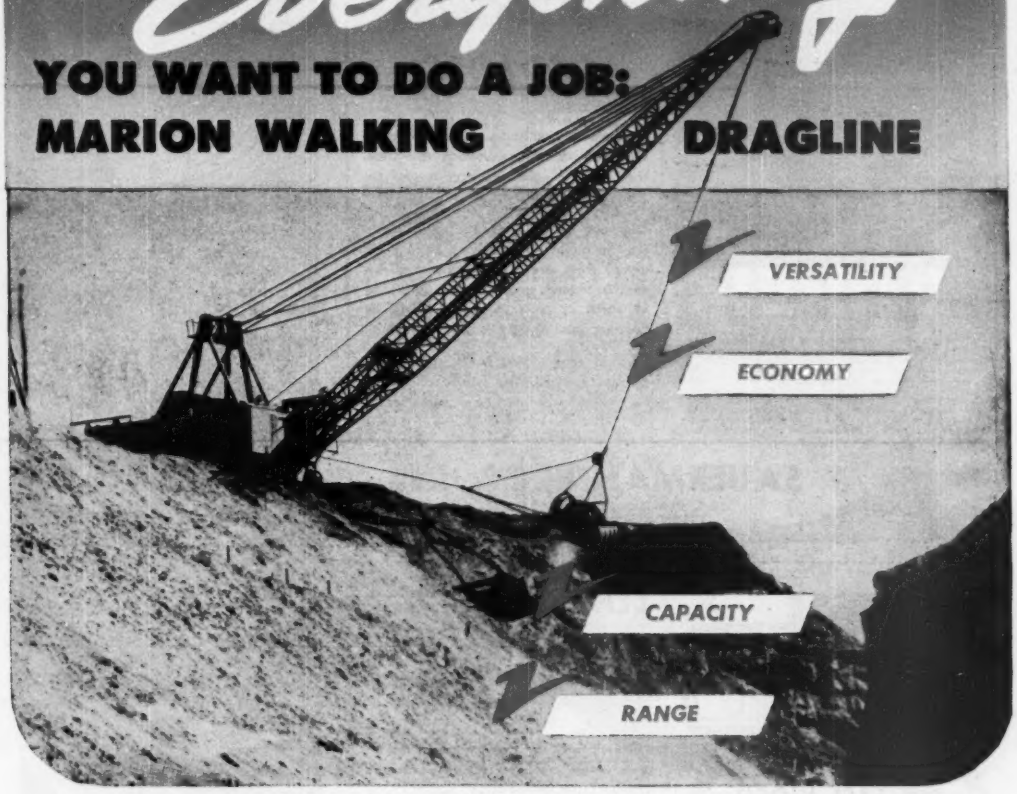

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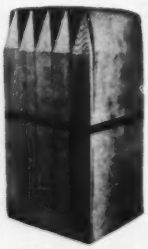

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(*Continued on page 107*)

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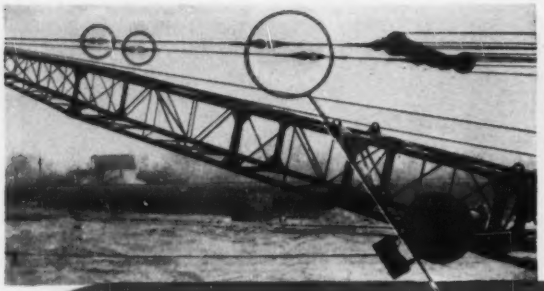

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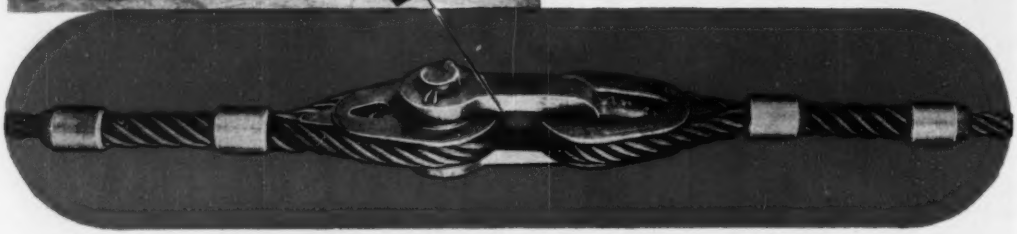

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Compact **wall-mounting Powereel** can be permanently mounted in or on trucks, walls, etc. to make easy and efficient handling of electrical cable. A special mounting flange can be bolted in place, and is threaded to fit a 1-in conduit for feeder connections. It will accommodate sizes up to No. 4 four-conductor cable. Sold without cables or plugs, these are available on request. Write **Industrial Electrical Works**, Department 63, 1511 Chicago Street, Omaha 2, Nebraska.

Plankweld, a pre-finished plywood wall panel available previously only in birch and oak is now being made in Phillipine mahogany and knotty pine, **United States Plywood Corp.** announces. Their **Orangeburg, S. C.** and **Seattle, Washington** plants are manufacturing it.

Engine analyzer contains six separate testing units made by **King Electric Equipment Co., 9123 Inman Avenue, Cleveland 5, Ohio.** They are: a coil ignition tester, spark plug tester, condenser tester, VAR tester, cam-angle tachometer tester and an exhaust gas analyzer. Full information on unit is available from the manufacturer.

Butler water filter, when attached to the cooling system of a car or truck, is said to remove and prevent rust scale and corrosion; also to collect sludge in an easily-removed glass bowl. Made by **Butler Engineering Company, 2612 Rousseau Street, New Orleans 13, Louisiana.**

Mercury vapor floodlight weighs only ten pounds and is available in a wide variety of brackets and pole and clamp assemblies from **Nepo Manufacturing Company, 527 S. Wells Street, Chicago 7, Illinois.** A spun aluminum reflector has permanently sealed-in glass lining which assures lasting cleanliness. For use with E.H.I, J.H.I, and A.H.I lamps.

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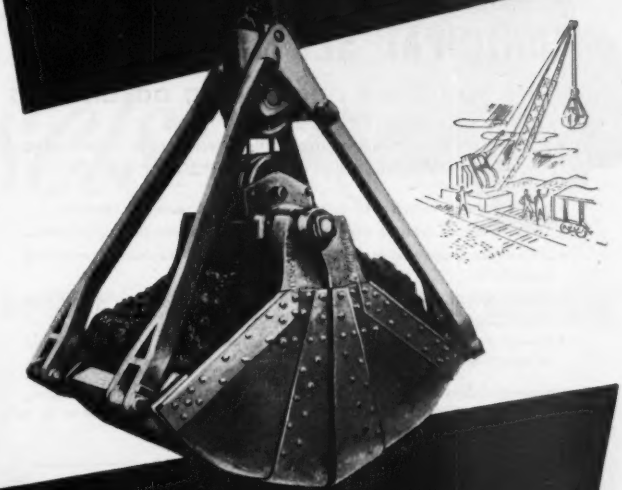

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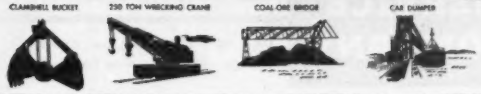

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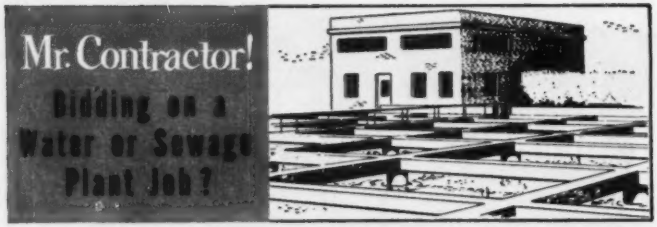

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MANUFACTURERS' PUBLICATIONS

Hard hats—To stimulate wearing of their protective hats, MSA has published a new little booklet which will accompany every new Skullgard from now on. The booklet points out the importance of adequate head protection by listing eight typical examples from the many in their files where workmen have been saved from injury and possible death. Another section is devoted to proper care of the hat itself. MINE SAFETY APPLIANCE COMPANY, BRADDOCK, THOMAS AND MEADE STREETS, PITTSBURGH 8, PENNSYLVANIA.

Lighting plants—marine type and water cooled in 1200 and 2200 watt sizes feature 4.25-hp engines with piston displacements of 23 cubic inches. Regular Universal inclusions are electric starter switch, flame arrester, drip collector, battery cutout, automatic thermostatic temperature control of cooling water, and other features. Complete specifications and price lists on these True Marine Light Plants can be obtained by writing UNIVERSAL MOTOR COMPANY, 346 UNIVERSAL DRIVE, OSHKOSH, WISCONSIN.

Hoisting towers—of tubular construction with welded assemblies of cages, bases and catheads are described and clearly illustrated in a 4-page folder. Statistics on these welded assemblies and the company's "through bolt" system of section assembly show how they have managed to reduce the number of separate parts required for erection of the towers while increasing overall strength. Their heavy-duty type tower has a live load capacity of 5000 lb. and a height limit of 1200 ft. The light-duty setup; 3200 lb. and 201 ft. respectively. Ask for Bulletin T-6. BEAVER ART METAL CORPORATION, ELLWOOD CITY, PENNSYLVANIA.

Tackle blocks—Here's a fine, carefully-written 52-page booklet which serves a double purpose. It's a complete catalog of size, service and design data for the company's tackle blocks and accessories. At the same time it's a handy reference guide and manual, containing sections on mechanical advantage, formulas, horsepower, reeving etc. Each description of a tackle block or device is accompanied by a photo, and includes tabular data on block size, rope diameter, outside sheave diameter, rim width and center pin diameter, tackle block weight and safe working load. Write on your

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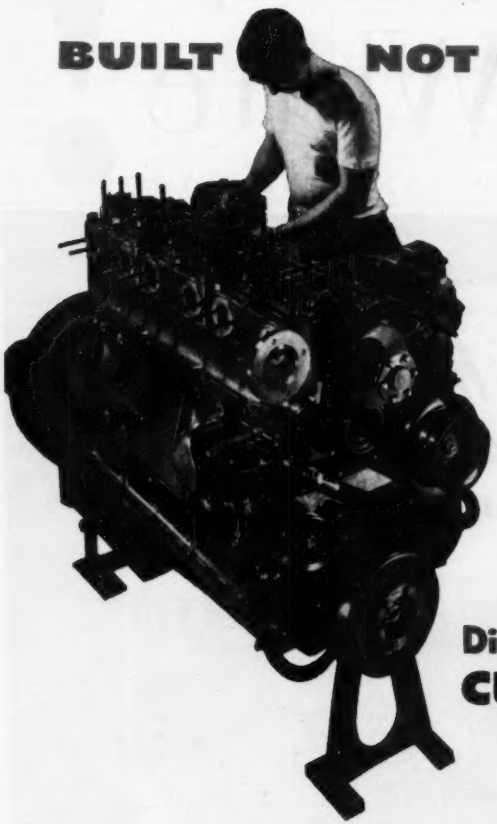

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Sarah Hale

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PORTLAND CEMENT

FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Manufacturers Publications . . .

company letterhead for catalog 51-B to THE UPSON-WALTON COMPANY, 12500 ELMWOOD AVENUE, CLEVELAND 11, OHIO.

Portable electric tools—The entire line of Stanley tools for working in wood or metal runs to 96 pages and is packed with information and descriptions. Included are such typical items as electric planes, portable routers, tool sharpening grinders, electric drills, Safetysaws and many others. Several of them are brand new models and never advertised. Others are well known and the catalog brings them all together between two covers. STANLEY ELECTRIC TOOLS, 300 MYRTLE STREET, NEW BRITAIN, CONNECTICUT.

Fork truck do's and don'ts—Fork truck drivers will enjoy reading this booklet titled "Safety Saves" and will benefit greatly by adhering to the common sense safety rules it presents. The warnings and admonitions are easily accepted, since they're written cleverly and supported with cartoons of hapless operators. It's a good fundamental book for newcomers and a fine refresher to the "1000-hour" men. Pocket size, it's 24 pages long and available from CLARK EQUIPMENT COMPANY, INDUSTRIAL TRUCK DIVISION, BATTLE CREEK, MICHIGAN.

Service tool guide for GM Diesel engines—If you now have or anticipate having a GM Diesel, series 71 or 6-110, you'll also want this booklet which covers special tools for servicing them. The guide contains descriptions model applications, illustrations, tool numbers and prices of more than 150 Kent-Moore special purpose servicing tools; it's also laid out to serve as a handy tool check list and guide for ordering tools not in stock. Write the KENT-MOORE ORGANIZATION INC., GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN.

Fluorescent fixtures—This bulletin is an addition to a larger one and they should be filed together for a complete story on the company's "Strip Line" System. New features in this bulletin include: extremely shallow channels, special terminal blocks, interlocking construction for continuous installation, junction box type ballast designed for remote mounting. New models are available for 48-, 72- and 96-in Slimline lamps. BENJAMIN ELECTRIC MANUFACTURING COMPANY, DES PLAINES, ILLINOIS.

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The boss settles the arguments

Nowhere on earth does there exist such a concentrated reservoir of construction workers as in New York. In the vast sprawl of buildings that make up the city's metropolitan area, more than a quarter-million construction tradesmen are normally at work.

Yet there has not been a major disruption of construction work over a jurisdictional dispute between construction unions in many years.

The reason is deceptively simple:

The bosses settle the disputes.

• **How it's done**—The procedure is also simple. For example:

Labor union A and labor union B develop a dispute. A's business agent thinks his men should do certain work that B's men are doing.

But nobody calls a strike. Instead, A's business agent goes to Howard McSpedon, ex-electrician president of the New York Building and Construction Trades Council, AFL, to make his complaint against B.

McSpedon calls in officials of union B, and may make a personal inspection of the job himself. He tries to compose the fight informally on a man-to-man basis.

If that doesn't work, A's man files a formal complaint with McSpedon, accusing B of a jurisdictional violation. McSpedon picks up his 'phone and puts in a call to the Building Trades Employers Association, where BTEA Board Chairman Peter W. Eller makes his headquarters.

Together, Eller and McSpedon make another try by calling both sides to an informal, but official, mediation or conciliation hearing. If they don't succeed in settling the dispute (they usually do), Eller advises both sides of their rights and the aggrieved union files a petition for an arbitration hearing. Eller then sets date for the formal hearing.

The men continue on their jobs.

• **Judge and jury**—The formal hearing is a very close approximation of a courtroom trial. But there is a difference—the judge and jury are always the same, and they're all from one side of the fence.

Eller himself is the judge. Former ironworker, hard-rock construction man, and formerly president of one of the nation's top construction firms (Thompson-Starrett), he's a fair-minded judge who will permit no nonsense from any quarter in his "courtroom", who knows his industry and its men, and whose stock-in-trade is common sense.

The jury is composed of the 14 members of the Executive Committee of the BTEA, all of them active construction industry employers.

Lawyers never appear, but both sides have the right to present and question witnesses, present evidence to prove their claims.

There is even the familiar "precedent" of any other courtroom—in this case the "Green Book" of the BTEA, listing all decisions and judgments since the plan started to function in 1937.

A decision may be rendered immediately, or may be handed down in several days. In any case, it is binding on all parties—backed by contract agreements and the power of the Trades Council, i.e., the labor unions. A decision may be (but seldom is) appealed to the National Joint Board for Settlement of Jurisdictional Disputes.

The important thing is that nobody quits work.

• **Born in difficulty**—Basic to the success of the system and to its development has been intelligent, forward-looking leadership on both the labor and employer sides of the disputes fence.

It wasn't always thus.

Organization of the BTEA itself (on May 26, 1903) grew out of a complete paralysis of New York City's building industry by a series of jurisdictional strikes. The contractors presented to the unions a "Plan of Arbitration" which was adopted in July, 1903, amended in 1905, and operated until 1910. A General Arbitration Board operated under this plan (with equal union and employer representation) and handled about 3,000 cases, but many provisions of the agreement were flagrantly violated, and the board's authority challenged.

However, for nearly 10 years, the decisions made by the defunct arbitration board were made part of most labor-management contracts. Then in the summer of 1919, five of the trades unions called strike after strike in disregard of their agreements—their officers admitted their inability to control their men. Out of that admission grew a new Building Trades Council (AFL) and a new agreement with employers.

This front was again broken when bricklayers—not in the council—struck for higher wages ($12 a day); ironworkers sought more money, and other trades were stirring uneasily.

Controversy after controversy cropped up through succeeding years, as increasing costs of living, shrinking construction work, other factors kept the labor market in a turmoil. Employers were not blameless either—one group or another was constantly stealing a march on its colleagues with grants of extra compensation and the like that eventually forced the rest of the industry to follow.

• **Climax**—Matters came to a head, finally, early in 1937.

After long years of strife, labor realized that something had to be done to stabilize work in the city.

Some of the necessary elements were present: Through long and sometimes bitter experience, both management and labor had developed strong, responsible organizations and leadership.

What was wanted now was some means of settling inter-union squabbles. Contracts and negotiation could take care of union-employer differences.

Crux was constitution of the body that would settle the disputes. Labor-management committees hadn't worked too well. Labor alone admittedly couldn't make final settlements—labor leaders say frankly enough that labor men on such boards are too often personally affected to afford impartial judgments.

• **Answer**—The answer had to be a management-only board, which could be considered impartial in an inter-union fight. The unions would back up such a board with contract provisions requiring compliance with arbitration procedures, see to it that these provisions were enforced.

It took a lot of selling—but there was something to sell. C. G. Norman, now-retired chairman of the board of BTEA and "grand old man" of New York construction, would be the first "judge". Universally respected, his name—and the cogent arguments of union leadership, plus the record BTEA itself in its dealings with its employees—sold the idea.

Today, Eller's office handles perhaps a thousand cases a year—only a fraction of them ever getting to "courtroom" trial. Many of the rest are settled by a meeting between the parties, many more by apparently off-hand advice on the telephone, more still at the dining-table or the bar in BTEA's comfortable mid-town headquarters.

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THROUGH THE YEARS, the Gulf Oil Corporation has turned to Raymond again and again to expand its facilities. For example:

At Gulf's marine terminal in Port Arthur, Texas, Raymond completed in 1911 a marginal wharf 25 feet wide and 7025 feet long. Later two similar sections were added to make the wharf more than a full mile long. Last year Raymond resurfaced the existing wharf with reinforced concrete and constructed a new wharf 25 feet wide along its entire face—doubling the dock area and permitting deeper dredging to accommodate large vessels. The job was completed well ahead of schedule and with a minimum of interference with Gulf's normal docking operations.

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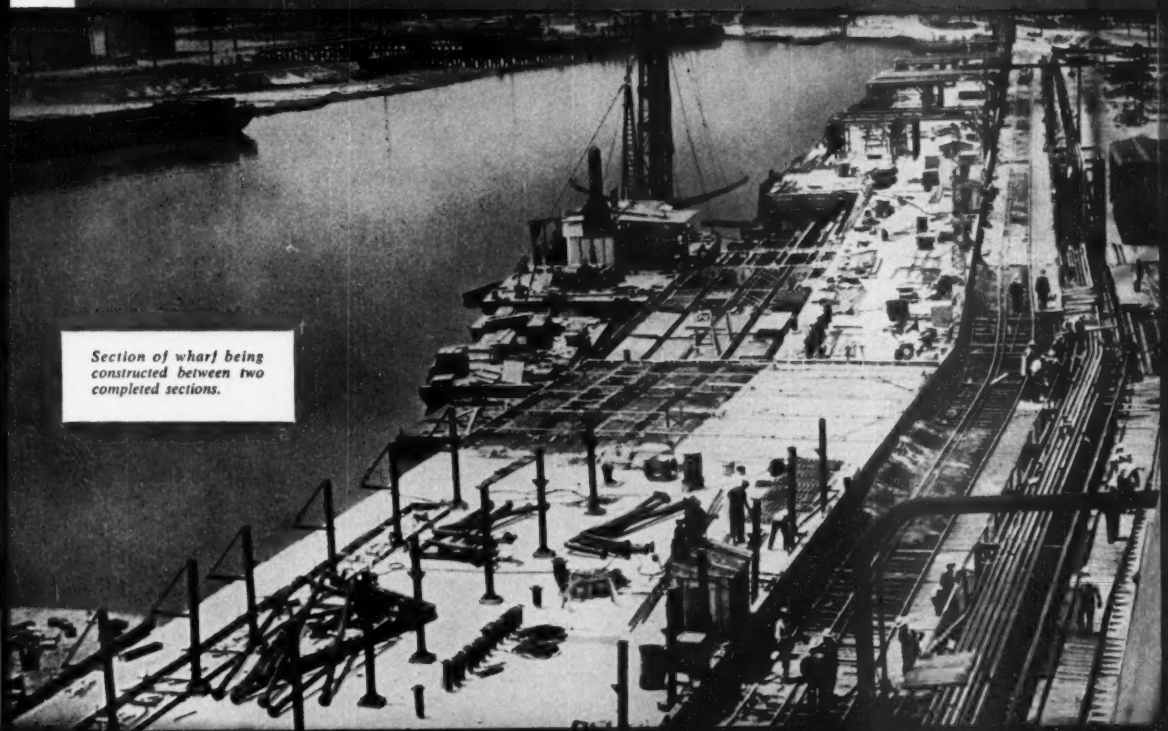


Section of wharf being constructed between two completed sections.

New electric drive "Tournatow" pulls 16 times its weight on TIMKEN® bearings

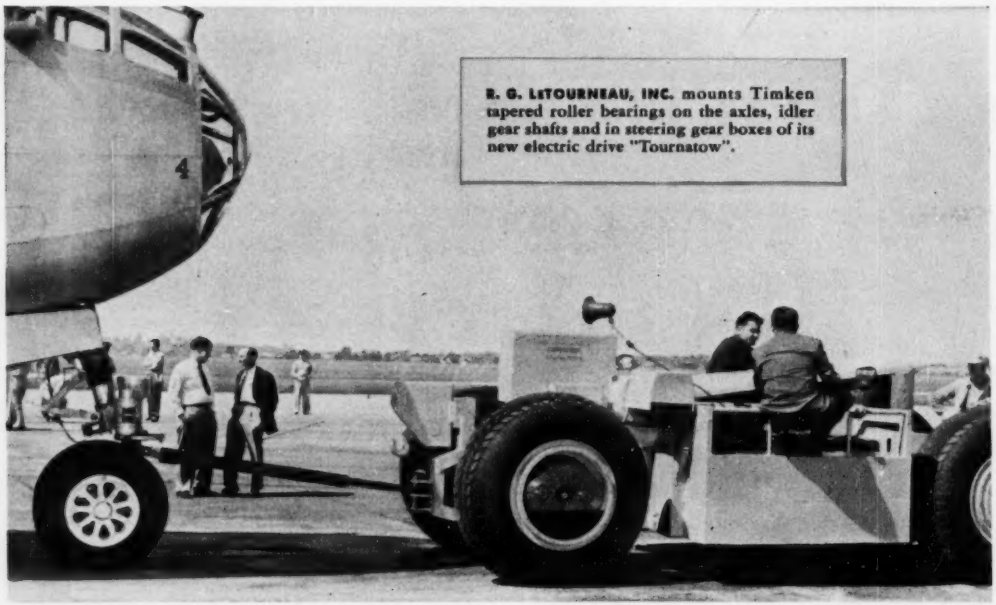
THERE'S no clutch, transmission or differential in this new electric drive "Tournatow". Flexible wires transmit current from its diesel powered generators to motors at wheels, winch and steering mechanism. It can pull equipment weighing up to 400,000 lbs.—sixteen times its own weight. To carry the heavy loads and insure smooth, trouble-free operation, Timken® tapered roller bearings are used on the axles, idler gear shafts and steering gear boxes.

Line contact between the rollers and races of Timken bearings provides extra load-carrying capacity. The tapered construction of Timken bearings enables them to take radial and thrust loads or any combination. Shafts and gears are held in proper alignment, thus reducing wear and minimizing maintenance.

The true rolling motion and incredibly smooth surface finish of Timken bearings practically eliminate friction. More effective closures are possible because Timken bearings keep housing and shaft concentric. Lubricant is kept in; dirt and grit kept out. And Timken bearings normally last the life of the machine because they're 1) engineered for the job, 2) precision manufactured, 3) made of Timken fine alloy steel.

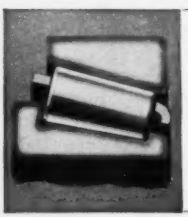
No other bearing gives you all the advantages you get with Timken tapered roller bearings. Make sure you have them in all the equipment you build or buy. Always look for the trade-mark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



R. G. LeTOURNEAU, INC. mounts Timken tapered roller bearings on the axles, idler gear shafts and in steering gear boxes of its new electric drive "Tournatow".

U. S. A. F. Engineer Photo



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Because the load is carried on the *line* of contact between rollers and races, Timken bearings carry greater loads, hold shafts in line, wear longer. The Timken Roller Bearing Company is the acknowledged leader in: 1. advanced design; 2. precision manufacturing; 3. rigid quality control; 4. special analysis steels.

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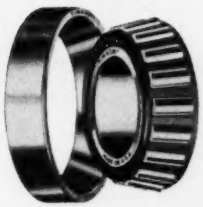

NOT JUST A BALL ○ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION ✳